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A Clinical Lecture

ON

DECEPTIVE SIGNS OF IMPROVEMENT FOLLOWING UPON SEPTIC INTOXICATION IN ACUTE APPENDICITIS, ESPECIALLY IN YOUNG PEOPLE.

Delivered at St. George's Hospital Medical School on Nov. 3rd, 1903,

BY SIR WILLIAM H. BENNETT, K.C.V.O., F.R.C.S. ENG.,

SENIOR SURGEON TO THE HOSPITAL.

GENTLEMEN,—It will be found that the clinical aspect of many of the surgical diseases with which we have to deal is often very different in young and growing subjects from that which is seen in those whose development has been completed. In appendicitis this is especially the case and it so happens that lately we have had several instances which illustrate a certain type of the disease in young subjects which is a very dangerous one and therefore well worthy of a little consideration. I have already spoken recently about the matter in the wards in the course of the ordinary clinical classes, but there are two or three special points which I am anxious to discuss more fully and the present lecture gives me an opportunity for doing this.

The first case to which I must call your attention is that of a boy, aged 15 years, who is in the FitzWilliam Ward, having been admitted on Oct. 19th. Four days previously he had been seized with the ordinary signs of appendicitis, that is to say, acute pain in the abdomen, vomiting, some tenderness, especially over the right iliac region, some distension, together with constipation which after a dose of castor oil was followed by some diarrhœa. I saw him in the ward directly after he was brought to the hospital and he was obviously suffering from appendicitis. He had a flushed face with dark lines underneath his eyes, his temperature was 101° F., there was a certain amount of tenderness over the right side of the abdomen low down, but no distension worth mentioning and no swelling or thickening of any kind was perceptible. He was admitted in the afternoon and as he had just been shaken up in the course of his progress to the hospital I thought it wise, according to my usual custom, to wait a little while until the effects of the journey had passed off before attacking the case from an operative point of view, as seemed likely to have to be done. I therefore left him with precise instructions that unless some distinct improvement took place in the course of the evening I should be sent for with a view to immediate operation. The boy's condition improved and there appeared to be no necessity for sending for me. On the following morning he seemed to my house surgeon to be still better and when I came to the hospital in the middle of the day I found him in this condition: the pain from which he had been suffering on the previous day had gone, the tenderness over the right side of the abdomen was less, there was no distension, the rigidity was very slight, and still no swelling of any sort could be found. His pulse was slower and there had been a very rapid drop in his temperature. The temperature, instead of being 101° or something of that kind, had dropped to 97° since the time of my seeing him the day before, an interval of about 30 hours. He expressed himself as being altogether more comfortable and I was told, in point of fact, that the boy was clearly better and in all respects more contented than he had been on the previous day. But in spite of these apparent signs of improvement in the symptoms I came to the conclusion that the boy was suffering from an abscess of the appendix, probably gangrenous, and that an operation was immediately necessary. The first point I wish to impress upon you in connexion with this case is the fact that the boy was apparently improving so far as the ordinary observer could see although in reality he was steadily growing worse. I wish you more particularly to bear in mind the extraordinary decrease in the pain, the fall in the temperature, and the increase in the general comfort of the patient which had occurred in the course of the few hours since I had previously seen him. The apparent improvement was in my opinion entirely deceptive and I determined to operate, expecting, as I said at the time, to find a gangrenous appendix. My anticipation proved to be true; there was a perforation in the appendix which was sloughing at the point of its junction with the cæcum. Around it was a stinking abscess and altogether the case was as bad a one of appendicitis as one could well meet with in a boy of the age I have mentioned. I removed the appendix and sewed up the resulting opening into the cæcum (the sloughing involved the cæcum itself), turning up a flap of peritoneum over it. The boy is doing very well.

In contrast with this case let us take that of another boy who came into the Belgrave Ward on Oct. 20th with symptoms of appendicitis, which in his case had commenced on the 18th at midday with sudden onset of pain about the navel, gradually localising itself in the right iliac region, followed by sickness, diarrhœa, and so forth. When he arrived he had all the characteristic signs you would expect in such a case, a high temperature, and a flushed face. He had not the black marks under his eyes presented by the other boy, but that might have been accidental; there was some distension, with some slight tenderness and rigidity over the right iliac region, but no tumour or thickening could be felt; as a matter of fact, the condition was very much like that of the other boy. In those circumstances I left the same instructions as in the other case—viz., that unless a distinct improvement took place in this boy's condition aid was to be sought with a view to early operation. This patient, like the other, appeared to improve and no call was made for an immediate operation. He became more comfortable; his temperature, which when he came in was 101°, fell on the following morning to 99°. His pain was less, the distension had diminished, the tenderness on the right side was not very great, although it still existed; the rigidity was less and still there was no tumour.

These two cases at first sight appeared to be practically on all fours with one another. But in the second case, instead of at once proceeding to operation as in the first, because I felt that an abscess was present, I deferred the question of immediate operation, as I very much doubted the existence of any urgent disease in the appendix, my feeling being that whilst, as I have already said, the condition of things in the first case led me to anticipate grave trouble, in the second there was no need for hurry and that an early operation was altogether unnecessary.

Now comes the question, taking the fact that the cases seemed at first sight so very much alike, Why did I in the one case come to the conclusion, correctly, that there was grave disease with gangrene of the appendix, and why did I in the other case, which was so much like it, come to the conclusion that no disease sufficiently grave to call for early operation was present? This is a most important clinical question. Had I been wrong in my determination in the second case it might have been a serious thing for the boy, and in the same way, if in the first case I had omitted to realise that the boy instead of getting better was getting worse, he would almost certainly have died, because if I had not operated when I did he would probably have been too bad for any operation to be of use. The whole position in those two cases depended upon two points—first, the condition of the temperature, and, secondly, the aspect and mental mood of the patient. I ought really to place the aspect of the patient first, because the state of the temperature is, although more obvious, a much less serious matter. The first boy when he came into the hospital, as I told you, had a flushed face, inclined to duskiness, black lines under his eyes, a furred tongue, and he looked distressed. He had not the "abdominal face." Do not be misled in these cases of appendicitis—we are not talking of other abdominal conditions—by the absence of what is called the abdominal face; it has little or no value in the early stages of appendicitis in young people. But this aspect which I have mentioned—namely, the flushed and dusky cheek, the black lines under the eyes, combined with a very furred tongue, carry a very definite meaning. In the case of the first boy, you will remember that when I saw him on the second day, although he was altogether more comfortable, the pain, tenderness, and rigidity being less and there being still no sign of tumour or induration, the boy was dull, inert, contented, lying quite placidly in bed and saying he was better; all he wanted was to be left alone. In the case of the other

boy, on the contrary, when seen on the second occasion the flushing of the face, although still present, was much less, his tongue had cleaned a little, and instead of lying in bed, dull and inert, he was sharper than he was the day before and answered questions much more quickly, smiling at something which was said to him. Later he soon lost the abnormal aspect of face altogether and became very sharp indeed, in point of fact he began to have some fear of operation and became nervous in consequence. Now, the difference in the changes in the condition of these two boys was what settled me in my diagnosis and so determined my line of treatment. The comfort of the first boy was simply due to inertia and dulled sensations resulting from increasing septic intoxication. He did not feel pain because he was indifferent; his blood was getting more and more poisoned from the absorption of septic material and he was growing more and more indifferent as the hours passed by. The worse that boy became the more contented he would be in consequence of increasing indifference resulting from septic intoxication which ensues very rapidly in cases of gangrenous appendicitis especially in young people. On the other hand, in a case like that of the second boy, as the inflammatory changes about the appendix begin to clear up the tendency to blood poisoning present at the time of admission gradually disappears and so instead of being abnormally content he becomes more alert, more active in mind, noticing things more generally, and by degrees returns to the condition of the normal individual. The lessons to be learned from these cases are of great value. Do not allow yourselves to be led to think that decrease of pain in a patient who is the subject of septic trouble necessarily means real improvement unless there is at the same time a general constitutional betterment, because, as I have tried to show, the decrease of pain may be the outcome of increasing septic intoxication, the disease being progressive all the time. On the other hand, if a general improvement in the condition of the patient is coincident with, or immediately succeeds, the loss of pain you may be sure that your way is clear.

Another point in these cases which must be carefully considered is the temperature. One is not infrequently told in cases of this sort upon going to see the patient perhaps for the second time that there is great improvement, because the temperature has fallen a couple of degrees in the course of the previous few hours. Now, whenever you have a patient suffering from this condition who has, let us say, when first seen a temperature of 102° F., which falls very rapidly to 99° or it may be to below the normal, bear in mind that this sudden fall may be a danger signal and not a sign that the patient is getting better. One of the commonest precursors of gangrene in this type of case is a sudden or very rapid drop in the temperature. A gradual fall in the temperature is always good, for it almost invariably indicates improvement. From what I have said you will see how easy it may be for inexperienced people to be deceived in cases of the kind which we are discussing; indeed, the symptoms are at times confusing enough to mislead those whose experience is considerable. A striking instance occurred in my practice not long since. A grave case of appendicitis was seen in a patient, 14 years old, late at night and an operation was arranged for the following morning. On arriving in due course for the purpose of operating I was met with the apparently gratifying report that there was great improvement, the patient, it was stated, being altogether better; the pain had almost gone, the temperature had fallen to normal, the child was dozing comfortably, a thing she had not done since the commencement of her illness, and it was hoped that the operation might be postponed. Upon examining the patient, however, I found that the falling to sleep was due to the septic intoxication, the comfort was the indifference resulting from the same cause, and the sudden drop of temperature was, I felt sure, due to gangrene of the appendix. My expectations about the case were fully realised, for I found at the operation, which was, of course, proceeded with at once, a gangrenous appendix in a stinking abscess. The patient fortunately survives, but the case was one of the worst I have seen to be followed by recovery.

To-day I have operated upon another case which teaches the same lesson. The patient is older than those already mentioned; he is 20 years of age and so is within the developmental period of life, which is an important point. A week ago he was seized with symptoms of appendicitis of the ordinary type—pain in the usual region, vomiting, and all the signs which attach to the complaint. He came into the hospital 48 hours ago. I was not sent for at once but saw him the day after his admission—that is to say, yesterday. He was then lying pretty comfortably in bed, his pain was less than when he came in, and I was told that his general condition had somewhat improved since his admission. Locally there were slight rigidity and a suspicion only of deep swelling. An operation was clearly indicated but as permission to operate had not been obtained it was postponed. This morning when I came to the hospital I learned that he seemed much better, was free from pain and comfortable, and the temperature had fallen. On seeing the man I did not like his aspect; there was the dusky flush on the face which I have mentioned, a black line under the eyes was very manifest, the tongue was thickly coated, and the breath was foul, still he was perfectly comfortable and happy. Here, again, operation revealed a gangrenous appendix, or rather the remains of it, in a stinking abscess. The same sequence of events had happened as in the other cases—diminution of pain, increasing comfort, and falling temperature, the apparent improvement, although the patient was rapidly becoming worse, being due to the deceptive indications of septic intoxication. Here also there was a rather sudden drop in temperature, which, let me once more impress upon you, should be regarded critically in these cases as it may be a danger signal.

Now comes the question, Why in cases of this type—cases occurring in young growing subjects—are the symptoms so acute and yet so deceptive, because this particular type of appendicitis, so far as I know, occurs with comparative rarity in any but young growing subjects. In all young subjects, and the younger the patient the more accurately does the observation apply, the infective processes are very acute and the results of them are, as a rule, very destructive. A very slight septic irritation, for example, of a lymphatic gland in an infant will cause immediate suppuration of such violence that the whole gland may be completely destroyed in a very short time, a sort of thing which does not occur in an adult. In any part, therefore where the lymphoid tissue is very abundant, as it is about the appendix, the end of which is extraordinarily well provided with adenoid tissue, you may be sure that in young and growing subjects any destructive process will often be extraordinarily acute, a fact which partly explains the peculiarity of these cases in the young. The initial changes coming on acutely in the first stage are followed so rapidly by necrosis and decomposition that the commencement of septic intoxication begins almost, as it were, before the constitution of the patient realises the onset of the condition—in fact, at a point before the actual acute symptoms develop in an adult the patient if a young subject is becoming dull and listless from the effects of the rapid absorption of septic material by the superabundant lymphoid tissue. The peculiarity of the symptoms then in young growing subjects depends first upon the tendency to great activity in these destructive processes, and, secondly, to the rapid absorption of septic matter in a region supplied only too lavishly (for conditions of disease) with ready means of taking up septic material.

A very important question with regard to appendicitis in young people frequently arises in connexion with which it is sometimes extremely difficult to know how to act. All boys under a certain age, I need hardly say, are liable to attacks of what is commonly called "stomach ache." That is a common discomfort of early youth and as a rule the explanation is simple enough. These frequently occurring stomach-aches in large communities of boys—such, for an example, as may be found in an ordinary public school—often afford very difficult problems for the medical officers of institutions of that kind. Schoolboys are naturally prone (as are also, it must be admitted, many of their seniors) to suffer from "stomach-ache" the result of ill advised consumption of indigestible material. Such stomach-aches are either merely the result of acute indigestion or they may be abdominal pains resulting from appendix trouble. I was talking only a few days ago to a medical officer at one of the public schools in which a boy had recently become very rapidly ill from appendicitis and died, and he pointed out how nearly impossible it was to prevent a misfortune like this sometimes occurring, seeing that the amount of stomach ache always prevalent at the school was so great. If every case of stomach-ache that occurred were to be regarded seriously half the school would be generally in bed. On the other hand, if these abdominal pains are regarded too lightly from time

to time there must occur one of these terrible cases of appendicitis which end so disastrously. And the difficulty is a real one, especially as the masters are, speaking generally, very averse to minor ailments being regarded too seriously. In these circumstances it is worth asking the question whether it is possible to form any idea at all as to which of these attacks of abdominal pain are simple "indigestion" stomach-aches and which are connected with some defect or disease about the appendix. It is a very important point—much more important than it appears at first sight. And I think after having seen a very large number of these cases in all sorts of conditions and in varying circumstances that it is at first possible to determine roughly between the ordinary colicky stomach-ache in young subjects and similar pains which arise from disease in the appendix. Speaking generally you will find that the common stomach-ache—which is, of course, acute as a rule and subsides very rapidly, perhaps with an attack of diarrhœa or vomiting or perhaps without—is rarely associated with anything like a material rise of temperature and in passing off it does so at once and is done with. There is no sort of after-thought with the ordinary stomach-ache of which we are speaking now. Moreover, and this is an important point, in the ordinary stomach-ache the pain is general and rather tends as the attack is passing off to lean to the left side of the abdomen as the colon becomes concerned. Now, the ordinary abdominal discomfort, call it stomach-ache if you like, which is associated with appendical trouble is almost always, in the first instance, accompanied by a marked rise of temperature, it very rarely passes off at once to be completely done with, there is generally an after-thought of pain about these cases where the appendix is at the bottom of the trouble, and then the intensity of the pain in them, instead of tending finally to the left side of the abdomen, invariably inclines to concentrate itself somewhere about the right side, not necessarily over the right iliac fossa but on the right side of the abdomen. It may expend itself over the region of the gall-bladder and I have seen it end in what at first sight looked like an acute attack of pleurisy. After the passing away of the acute abdominal pain or discomfort in cases of "stomach-ache" there is one sign which is as certainly pathognomonic of appendix trouble as any one sign can be of a lesion, and that is a feeling of discomfort or "stiffness" about the right iliac region upon attempts at extreme extension ("stretching") of the lower limbs, a condition which never follows mere "stomach-ache"; but in this connexion let me remind you of what I am constantly endeavouring to emphasise in these lectures—viz., that no one sign must be regarded as a sure indication of any given disease unless it is corroborated by some of the other ordinary signs of the complaint.

A Clinical Lecture

ON

HALLUCINATION.

Delivered at the Richmond Asylum on Jan. 6th, 1904,

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LADIES AND GENTLEMEN,—In a case of what it is convenient to call mental disease the whole mind is affected and divisions according to the various functions which appear to be engaged are merely divisions for convenience of study. One of the most striking symptoms of alienation is the existence of hallucinations. The hallucinatory state is interesting on account of its frequency and also because sensory phenomena are, comparatively speaking, more easy to study than certain other mental conditions. Furthermore, certain sensory disturbances which seem identical with, or closely akin to, hallucination occasionally occur, perhaps physiologically and certainly in conditions which are not commonly classed as mental diseases. Finally, in the present state of our knowledge hallucination *appears* to be a relatively simple if not an elementary mental disturbance; therefore the hope is suggested that its study may furnish a key with which to open the more intimate chambers of the mind, for the progress of knowledge in other departments has usually been from the more simple to the more complex. Thus while we must recognise that the occurrence of hallucination is not to be regarded as an isolated phenomenon in any case of insanity it is instructive to devote some special consideration to its clinical study.

It is in cases of paranoia that we find hallucination in its most remarkable form. Paranoia, as I have told you, is a condition characterised by fixed systematised delusion and, as is commonly said, an indifferent emotional state—that is to say, an emotional state not constantly or fundamentally exalted or depressed. I am disposed to think that it would be more true to say that suspicion is the emotional element in paranoia. Hallucinations are specially frequent in this affection and are commonly very constant in their mode of appearance. In dealing recently with the question of incoherence I have pointed out to you that incoherence (perhaps sometimes true but often merely apparent) occurs in association with delusion. It is, nevertheless, a less prominent feature of paranoia than of almost any other form of mental disease and its relative slightness facilitates the observation of sense disturbances.

The case which I bring before you to-day is one which exhibits hallucinations of almost every division of every sense. When we speak to him we are reminded of Ball's striking remark to the effect that such cases recall to our mind the fundamental principle of the religion of Buddha—namely, that our senses are absolutely deceptive, that we are surrounded by void space, and that the whole universe is only a gigantic hallucination.

The patient, a male, was admitted to the Richmond District Asylum, Dublin, in July, 1898. He was then aged 54 years. He is married and is the father of several grown-up children and was formerly employed as a butler. His friends stated that he had been at least two years insane. He was admitted from a workhouse, where he had been living for some time, having been thrown out of employment by his mental state. His family history is not very full. A maternal aunt suffered from senile dementia. His mother was liable to asthma from middle age and "would not take any medicine for fear that there might be mercury" therein. The patient himself was a steady hard drinker for many years. He is, as you will see, a calm, grave-mannered man who expresses himself in measured and generally accurate language. He rarely contradicts himself and seldom exhibits verbal incoherence. His memory is excellent for everything connected with his own case and if he sometimes shows an indifference to current events this seems explicable through his absorption in his own troubles. He is industrious and a most intelligent worker. Since he has been in the asylum he has learned to weave extremely well; latterly he has given up that occupation which he thought did not suit him, and employs himself about the kitchen, where he is most useful. He is never violent in action and his complaints, if one accepts his premisses, are not unreasonable; they are not rudely made or unduly pressed. While at his work he often swears loudly and with apparent anger at his imaginary persecutors. We do not find him a dangerous person though he belongs to a class in which are included some of the most dangerous of patients. He sleeps badly. He is apt to be noisy at night, loudly scolding his enemies, and sometimes getting up to search for them or their machines. He tells a very definite story. On July 22nd or 23rd, 1896, he was working in his pantry when a man whom he did not know came into the room. There is a slight discrepancy between the account which he gave of this interview on admission and his account to-day. He then told us that he interchanged a few words with this man; now he says that they did not speak. The stranger went out again and the patient, who took him to be a friend of one of his fellow servants, thought no more of the matter then. That night, he tells us, he was attacked with pains in various parts of his body and at the same time heard a voice which he knew was the stranger's using injurious and abusive language. From that time till now he has been constantly subjected to a variety of torments which he designates under the general name of "practice."[1]

It is not generally desirable to examine a patient with

[1] The term, I think, is not a neologism. I have known one or two patients before who used it in the same sense: it is an accidental survival in this district of an old meaning of the word constantly to be found in the writers of Shakespeare's time. Othello was "fallen in the *practice* of a cursed slave." Edmund, in *King Lear*, talks of "thy suggestion, plot, and damned *practice*," and Goneril says, "This is *practice*, Gloucester," in a similar sense.

open reference to a systematic scheme, but this case is so full that much time would be lost in going over individually the various statements which he has made at different dates and as it happens one can examine his senses one by one without producing resentment or reticence on his part. Allow him from time to time to digress into theoretical explanations of his sufferings and denunciations of the practice to which he is subjected, and he readily tells everything. We find, then, hallucinations in the following sensory fields.

1. *Dolorific.*—General surface sensibility is painfully affected. The pain has the character common in such cases. He describes it as "darts," "prods," "electric darts," "electric fire," "numbness darting along the limbs," "like a prod with a sharp instrument," and "as if one were struck with a lance." Sometimes the pain takes the form of "pressure," sometimes again, especially "when it comes on the breech it is like the stinging of a bunch of nettles." On one occasion he described a darting pain in the position of the ulnar nerve at the elbow which shot down the inside of the forearm and made the ring and little finger numb, but his pains rarely follow the course of a nerve. He sometimes has darts in his feet but mostly a burning pain in the soles. He so repeatedly talks of being "struck" with pain that I think this word does not merely express a theory but signifies also the sharp sudden way in which the pain comes. The pains were at one time described as being equally distributed everywhere. More recently they affect chiefly the left side.

2. *Kinetic or muscular.*—He experiences sensations of weight and heaviness in the limbs so that he feels that to walk or to raise his hand to his head requires an immense effort. He complains further of feelings of pressure, but it does not seem possible to disentangle these from sensations of pain.

3. *Thermal.*—Besides sensations of pain which he compares to fire he experiences feelings of warmth "shot over" him as he says. These are followed by feelings of icy cold or the latter occur alone. These alterations in the temperature sense are a frequent cause of spontaneous and bitter complaints.

4. *Hygric.*—Baillarger, I think, was the first who described as a sense disturbance the subjective sensation of moisture. Remadier in 1888 claimed that the sense of moisture constituted a special division of sense. Tambroni about ten years ago and more recently (September, 1902) Ravenna and Montagnini describe hallucinations of what they term the hygric sense. Our patient tells you that he experiences feelings as if he was drenched with water. "I am drenched all over with water, or one side or the other is drenched with water. My clothes are not wet but I feel the water." At other times, however, he says he feels his bedding damp. There is also a sensation, not so frequent as the drenching, as if someone was dropping water upon him.

5. *Tactile.*—True tactile hallucinations are indicated by "a wet sticky feeling that they put into the ends of my fingers, though my fingers are not wet at the same time"; perhaps also by the occasional feeling of a sticky liquid covering the body all over.

6. *Genital.*—His "private parts are tampered with." Not merely pain is produced but specific sexual sensations occur, often ending in complete sexual orgasm. One of his strongest complaints is of this method of persecution which he describes as cowardly and vile.

7. *Visceral.*—There is a group of sensations connected with the abdominal viscera which in health rarely ascend above the threshold of consciousness but which often form portion of the hallucinatory field in insanity. It is convenient to call them visceral for want of a better name. The present patient is from time to time "struck" in the abdomen (interiorly) with rending pains. He has pains in the lower bowel as if the rectum was being torn out: "The rectum is being continually attacked with electricity"; pain in the upper part of the abdomen which "drives the stomach up into the chest"; an odd sensation, "as if I were hollow and saliva were dropping down from the throat into the stomach," perhaps belongs to the same order.

8. *Respiratory.*—I believe that there are specific sensations connected with the function of respiration, though the fact has not been generally recognised. This patient's breathing is "tampered with"; "It strikes me on the chest when I am taking a breath so that I cannot breathe."

9. *Olfactory.*—Besides direct interference with the breathing there is an interference by noxious gases which at once suffocate and stink (the association, as might be expected, is very common). Sometimes the smell is acid, sometimes it resembles ordinary coal gas; at other times, without suffocation, there come horrible smells (fæces and the like). Of late olfactory disturbances are less complained of and the smells are only spoken of to-day as a reminiscence.

10. *Gustatory.*—In searching for these you must not confound taste and smell, as your patient generally does. In the case before us true gustatory disturbance occurs: the patient experiences strong tastes, always disagreeable, sometimes bitter, sometimes acid, sometimes salt "like brine."

11. *Visual.*—Séglas has divided visual hallucinations into three classes, elementary, common, and verbal. Our patient suffers mainly from the first. "Visions are cast before me; I am made to see a sort of green cloud, also landscapes and avenues of trees." The green cloud has been an early symptom. "Lights are flashed across the face when the eyes are closed; it is as if the eyelids were transparent." In reading "something flashes across the letters." Sometimes, he has told us, he sees the figure or the shadow of his tormentor, but when he strives to look at it intently it is gone. It is to be observed that the visual impressions have the air of being less distinct than the other hallucinations and this is what we most frequently find in such cases. On the other hand, the man who visited our patient in his pantry, whom he associates with the origin of all his troubles, was seen distinctly enough and is not at all regarded as being a "vision." However, we have no means of being sure of the objective unreality of this visitor.

12. *Auditory.*—Again adopting Séglas's division, which has a much more useful application to auditory than to visual hallucinations, we find that in the patient before us there are two classes, elementary and verbal. The former are represented by vague buzzing noises, also by a sound resembling a drum-beat, which he exemplified by tapping with his finger on the antitragus and saying, "It is like the sound thus produced." The verbal hallucinations, however—"the voices"—are the chief thing. When one asks whose the voices are he often replies that there is only one voice and that he recognises that as the voice of the visitor so often referred to, but he often talks of the "voices" much as other patients of his class do and speaks of the originators of the voice as "they." The voice can be briefly described in his own words: it is "personal, threatening, indecent, and blasphemous." You will find in most cases of auditory hallucination that the voices have these characteristics. Remarks are made to him about trivial events of his daily life; threats are uttered of murder, torture, &c.; horrid obscenity is dinned into him mixed with monstrous blasphemy. Sometimes he speaks of it as the "torturing voice" but more commonly as the "thwarting voice," because everything that it speaks is intended to vex, to annoy, and to thwart him. His belief in the reality of the voice is most intense. He often answers it in angry tones. He laughs scornfully at any suggestion that it comes from his own mind. "The voice," he says, "whatever it may be, is a distinct voice. It comes to me as your voice comes now from you to me. It is equally loud, it is equally clear, it is equally real; I know it is not I that do it."

13. *Psycho-motor.*—Though the leading feature of this case is the occurrence of auditory hallucinations—i.e., hallucinations which appear in consciousness as manifestations of activity in the auditory speech centre—yet there are indications of the engagement of the motor speech centre. Thus he tells us: "By day I hear the voices through my ears the way I hear you speak; by night they are mostly working on the breath going in and out of the mouth." You will remember many cases in which I have recently demonstrated this condition to you in a much more marked degree and you will recognise the identity of the state he describes with the more extreme forms in which the "voice" is spoken of as originating in the patient's own vocal organs solely and being indeed not so much a voice as a sensation of movement.

There is but one important hallucinatory group which seems to me to be absent in this case. The patient sometimes complains that he feels tired and stupid from annoyance but he never complains, as many paranoiacs do, that his mental operations are interfered with. His thoughts are not compelled; he is not made to say or to do things against his will. I believe that there is among our sensations a sense of mental action. Rarely in health does it appear above the level of consciousness, but in conditions of mental disease it is often very prominent, presenting what appear to be identical with, or at least closely analogous to, hallucinations. I am therefore in the habit of talking of hallucinations of the sense of

mental action and I have demonstrated to you in several other cases what I mean by this phrase. The present case, so complete otherwise, does not exhibit any sign of this condition.

Association of hallucinations.—The commonest form in which association of hallucination of various senses occurs is that in which the patient sees a man or angel or demon who speaks to him. Here there is another association. He tells us: "When I am attacked with pain the voices come—never the one without the other." This is nearly identical with what he said to me more than four years ago: "The practice does not come without the torturing voices nor the voice without the torture." This fact confirms him in his intense belief in the reality and external nature of all his troubles. "It would be," he has said, "a queer mind and body that would torture anyone in this manner of its own accord." As I have said, it is not generally a good plan to examine a patient from notes as we have examined this man, but everything that he has now said he has spontaneously stated before in almost the same words either to me or to some of my colleagues.[2] His examination now has been based upon notes made from his own statements.

Time does not permit me to dwell to-day on the theoretical aspects of hallucination but two things may be remarked. Such a case as this shows clearly that whatever may be the remoter origin of hallucinations the sensory centres in which in health we receive impressions from without must be engaged in disease. No force of imagination would enable our patient to conceive so complete a series of sensations involving almost every variety of every sense and distinguishing from one another with physiological accuracy various sensory fields of the existence of which he must have been intellectually perfectly ignorant.

The true essential condition of mental disease in this man appears to me to be found not in his hallucinations, picturesque and remarkable as they are, but in the fact that the judgment is so far impaired that it accepts the hallucinations. It is not merely the case that the patient is deceived by a wrongly acting sensory apparatus, but though he talks with considerable acuteness and reasons in a pseudo-logical way, yet he unhesitatingly accepts the absurd notion that all the complicated, protracted, and virtually incessant sufferings that he endures are due to the machinations of a man whom he never saw but once and for whose action he can suggest no motive. Therefore, either the sensory centres must directly take part in the function of reasoning or else the higher psychical centres are affected with the same disease which disturbs the former. In either case the solidarity of cerebral function is complete.

ON HOUR-GLASS STOMACH FROM A PERSONAL EXPERIENCE OF 23 OPERATIONS.

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THOUGH hour-glass stomach may arise from three separate causes—chronic gastric ulcer, perigastritis due to adhesions, and cancer—the deformity in itself almost constitutes a distinct disease which is associated with a peculiar train of symptoms. The name "hour-glass stomach" was adopted long ago when the disease was always thought to be congenital and before it was recognised that the stomach might be divided into more than two cavities, and the name is sufficiently distinctive to hold its own in medical literature.

The cases given below so distinctly prove that hour-glass stomach owes its origin to definite organic disease that I need not spend time over combating the question as to whether it is always acquired, for doubtless very rarely it may occur as a congenital condition, just as congenital narrowing may be found at the pylorus, in the intestine, or in the rectum. As yet, however, in an experience of over 1000 operations on the upper abdomen, in which the stomach could be seen and examined and about 400 of which have been on the stomach itself, I have not met with a single case of congenital hour-glass constriction.

Perigastric adhesions may cause a narrowing of the stomach in two ways as exemplified by Cases 1, 2, 16, and 19 related hereafter. In Case 1 perforation had led to firm adhesions to the anterior abdominal wall, and ulceration had led to cicatricial contraction. In Case 2 the stomach was divided into three portions, the proximal narrowing being dependent on a band of adhesions extending from the liver to the transverse colon, and the distal constriction being caused by cicatrisation of a chronic ulcer. The first cavity was divided into two by the firm band, leaving the middle loculus of the stomach the smallest of the three cavities and the cardiac pouch the largest. In Case 16 the perigastritis had led to adhesions of the anterior wall of the stomach to the anterior abdominal wall, thus leading to a sagging of the lower wall of the stomach on each side of the adhesion, so that when the patient was erect the food had to be forced upwards from the first cavity into the second and then from it through the pyloric orifice. In this case the patient was quite comfortable so long as she was lying down and taking her meals in that way, but feeding in the erect posture produced great distress. Case 19 is another example of perigastritis fixing the stomach to the anterior abdominal wall, but as in Case 1 the ulceration had also produced a cicatricial stenosis of the centre of the stomach so that two causes were at work in producing the hour-glass deformity. With the exception of the four operations for cancerous hour glass contraction, in all the others the deformity was due to chronic ulceration.

The symptoms for a time entirely depend on the cause, whether that be ulcer, cancer, or perigastritis, but ultimately when the deformity has developed the signs are more or less distinct. While in nearly all cases the cause has been capable of diagnosis, the effect has also been diagnosed in some and may be in nearly all cases if care and time be given to the diagnosis.

It is unnecessary here to enter into the ordinary symptoms of ulcer or of cancer. In the latter the history will have been an acute one and associated with a well-marked tumour of the stomach, the symptoms being referable rather to the disease than to the deformity, but in the former (ulcer) in all the patients that I have seen there has been a long history, in some cases extending over 20 years and in no case under two or three years. The symptoms are for the most part pain after food, vomiting, sometimes of blood, and great wasting. In a number of cases tumour develops owing to the enormous thickening which occurs around a chronic ulcer, and so marked has this tumour occasionally been that some of my patients have been sent with the idea that they had cancer and even when the abdomen has been opened it is not always easy to say that the case is simple and not malignant. The well-known fact that cancer not infrequently supervenes on chronic ulcer adds to the difficulty, but when the abdomen is opened it will be found as a rule that the glands in ulcer are discrete and rounded and the tumour is not nodular or craggy, nor are any secondary nodules seen on the surface of the stomach or in the liver; moreover, ascites is absent. As a rule, dilatation of the proximal pouch, when the cause is ulcer, leads to symptoms simulating dilatation from pyloric stenosis. In several of my cases the patients have been conscious of fluid passing from one cavity to the other with an audible gurgle or murmur, and in one case, with the stethoscope over the epigastrium, I was able to hear the passage of the stomach contents through the strictured part, on alternately compressing each side of the abdomen. In several cases, on distending the stomach with carbon dioxide, the proximal cavity first became distended and afterwards both cavities became outlined with a sulcus between. Another distinctive sign is the following. On washing out the stomach until the fluid returns clear, suddenly, without any warning, the next lavage immediately afterwards may return foul owing to the second cavity having regurgitated its contents into the proximal clean one; or as in Case 6, the second cavity discharges foul material by the side of the tube which has the moment before been evacuating clear fluid. A sign pointed out by Wolfler is that on washing out the stomach the fluid may entirely disappear and cannot be made to return through the tube, the reason being that it has passed straight through into the second pouch.

The distinctive symptoms will depend on the position of the constriction. In Case 15 the narrowing was close to the

[2] I am indebted for many valuable notes on this case to my former colleagues Dr. D. F. Rambaut, Dr. W. J. McKeown, and Lieutenant G. F. Sheehan, R.A.M.C., and to my present colleague, Mr. J. M. Redington.

cardiac orifice and the first cavity consisted mainly of the dome of the stomach. Here, the fluid, directly it entered the stomach, passed over the ulcerated surface and produced pain almost immediately after swallowing. It will be easily seen that the constriction in this position may simulate stricture of the œsophagus: the differential diagnosis may, however, sometimes be made by the passage of an œsophageal bougie. In the greater number of my cases the constriction has been about four inches from the pylorus and in nearly all the proximal cavity has been larger, giving rise to the well-known symptom of dilatation of the stomach due to pyloric stenosis. In nearly all cases of hour-glass stomach spasm of the pylorus is present, since the ulcer is usually associated with hyperchlorhydria and with considerable irritation, in which cases the second cavity may be dilated so as to equal the first in size, or there may be also cicatricial stenosis of the pylorus, as in Case 6, where at the same time pyloroplasty and gastroplasty were performed. Very frequently, however, the second cavity is of minor importance and in such cases hour-glass stomach is usually not diagnosed, the operation being simply undertaken for chronic gastric ulcer with dilated stomach.

The treatment of this condition is purely surgical and, in fact, operation ought to be undertaken long before the ulceration has led to such extreme deformity, for during the whole of the intervening period life has been in jeopardy, either from perforation or hæmorrhage, and during the whole of the time the patient has led a miserable existence on the verge of starvation because of the inability to take proper or sufficient food. After surgical treatment has been decided on the nature of the operation will have to be settled when the abdomen is opened and the stomach is exposed. Where the narrowing is in the centre of the stomach, gastroplasty is a most efficient procedure and in all the cases in which I have performed that operation alone the patients have recovered and have remained healthy. In Case 6, where at the same time I had to perform a double operation, gastroplasty and pyloroplasty, I had to apply the sutures under tension owing to the length of the stricture. Had I been operating now I should have performed a gastro-gastrostomy together with a gastro-enterostomy which would probably have given a good result.

The operation of gastroplasty may be performed either by means of simple sutures or by suturing over the largest size bone bobbin, the latter being the method that I myself have adopted, the first principle to be borne in mind being to make the opening sufficiently large to secure union of the edges without tension. If the ulceration has not produced extreme contraction and the second pouch is not very prominent, a posterior gastro-enterostomy may be the operation of choice and it has answered quite well on the six occasions in which I have employed it, but my experience would lead me not to advise the anterior operation in these cases. Where the two cavities are equally dilated or connected by a very long stricture as in Case 6, an anastomosis may be made between the two cavities so as to short-circuit the stricture by the operation known as gastro-gastrostomy, but if there is active ulceration going on or the pylorus is stenosed, I would at the same time recommend a posterior gastro-enterostomy. Dr. Joseph A. Blake has recently suggested a modification of gastro-gastrostomy after the method employed by Finney in pyloroplasty; the idea seems a useful one and has answered well in one case.

It is most important to make a very careful examination of the whole of the stomach in order to see that the proximal cavity is drained either into the distal one or into the jejunum, for it has happened on several occasions in reported cases that a gastro-enterostomy has been performed by joining the second cavity to the bowel, which can, of course, be of no benefit. In two reported cases the strictured passage has been digitally dilated on account of the difficulty in gaining access either because of extensive adhesions or from its position near the cardiac orifice, but in such cases it is desirable at the same time to perform a gastro-enterostomy.

In cases of cancer causing hour-glass contraction two procedures are open to the surgeon—either the performance of gastrectomy or gastro-enterostomy. In two of my cases the latter operation was done, the one being performed by the anterior method, where the patient died on the tenth day, and the other by the posterior method, the patient being extremely ill and unable to bear the major operation of gastrectomy which was done five weeks later with an excellent result. In the two cases where excision of the constriction was performed, the two ends of the stomach being united to a large decalcified bone bobbin as in enterectomy, the patients made smooth recoveries, one living for 16 months and the other being well at the present time, nearly three years later.

The following is a brief description of the cases to which I have referred.

SIMPLE HOUR-GLASS STOMACH.

CASE 1.—The patient, a married woman, aged 45 years, was admitted to the Leeds General Infirmary on May 10th, 1899, with a nine years' history of stomach trouble. The first attack was accompanied by severe pain after food and by vomiting so that she was unable for three weeks to retain anything on the stomach. After a period of almost complete starvation she recovered and was comparatively well for six years when a second period of illness occurred. On both occasions a swelling in the epigastrium with great tenderness was noticed. In September, 1898, a third attack occurred, since which time she had never been free from pain and the swelling and tenderness in the epigastrium had persisted. The patient was very much reduced in strength and weight.

An operation was performed on May 18th, 1899. Very firm adhesions were discovered between the anterior stomach wall and the parietes, on separating which a perforation was found in the centre of a cicatricial mass placed in the middle of the stomach which had divided the organ into two cavities, the proximal one being the larger. The stricture was divided longitudinally by a very free incision and the edges were brought together transversely over a decalcified bone bobbin. The patient was able to leave for home on June 6th when she weighed 6 stones 7 pounds, this being a gain in weight. On July 29th a report was received saying that she weighed 7 stones 2 pounds and that she was well.

CASE 2.—In May, 1899, I was asked by Dr. W. Duncan of Clay Cross to see a female patient, aged 26 years, who had been ill for 15 years with stomach symptoms, characterised by pain after food and vomiting. For some years the vomit was coffee-ground in character and streaked with bright blood. It varied from a small quantity to several pints, but for the past eight years no blood had been vomited, the vomit being sour, watery fluid in large quantities. Flesh had been steadily lost until the patient was reduced almost to the state of a living skeleton.

On June 6th on opening the abdomen the stomach was found to be trifid owing to a double constriction, the proximal one being formed by an adhesion passing from the liver across the greater curvature of the stomach, constricting it; the distal cavity was caused by a stricture about three and a half inches from the pylorus, it being dependent on a cicatricial contraction due to chronic ulcer. The proximal cavity was the most dilated and this gave rise to the stomach splash and to the well-marked signs of stomach dilatation. On dividing the firm band of adhesions forming the first constriction a sulcus was left in the stomach. On opening the second stricture a chronic ulcer was exposed and the channel was so narrow that it would only allow the passage of a No. 12 catheter. Gastroplasty was performed, one of the largest size decalcified bone bobbins being used. The patient made a good recovery and returned home within the month. A report received on August 6th stated that she had gained two stones in weight and was quite well.

CASE 3.—A married woman, aged 23 years, was admitted to the Leeds General Infirmary with a history of two years' pain after food and vomiting with great tenderness in the epigastrium and loss of three stones in weight during the past two years. A well-marked stomach splash could be made out but no tumour was manifest and the patient could with difficulty bear palpation on account of great tenderness.

On July 20th, 1899, the abdomen was opened and the stomach was found to be hour-glass in shape. A constriction was found two inches from the pylorus, just admitting the tip of the little finger. Gastroplasty was performed, the suturing being carried out over the largest-sized bone bobbin. The patient made a good recovery from the operation and returned home on Sept. 16th.

CASE 4.—The patient, an unmarried woman, aged 48 years, was seen by me with Mr. F. T. Hindle of Askern. There had been indigestion and flatulency for 20 years and free hæmatemesis two years previously. There was great loss of flesh, dilatation of the stomach was well marked, and epigastric tenderness was present.

On July 28th, 1899, gastroplasty was performed. Extreme

contraction one-third of the stomach length from the pylorus was discovered. The stricture would just admit the tip of the little finger. The patient made a good recovery from the operation and there was an increase of weight on Nov. 1st. The patient was quite well a year later, but soon after she began to complain of pain dependent on perigastritis, for which an operation was subsequently performed (see Case 16).

CASE 5.—In August, 1899, I saw a female patient, aged 52 years, with Dr. E. Walker of Huddersfield. The patient gave a history of stomach trouble lasting for 26 years. At first the pain had occurred about two hours after food and vomiting was only occasional. During the first 20 years there had been periods of comparatively good health between the severe seizures. In 1894 she was told by an eminent physician that she would never be cured but might be relieved by dieting. For a year she had been sick every third day, vomiting in large quantities, and during that time she had lost two stones in weight, her weight being reduced to 5 stones 10 pounds in her clothes. Dilatation of the stomach was well marked; peristalsis could be seen and what was taken to be the pylorus could be felt to harden under the palpating hand.

On Sept. 9th the abdomen was explored and an hour-glass contraction of the centre of the stomach was discovered, the stricture only just admitting a No. 7 catheter. The proximal cavity of the stomach was enormously dilated and there were great thickening and induration around the stricture. Gastroplasty was performed by means of a bone bobbin and the patient made a good recovery. On Nov. 1st she had gained 26 pounds in weight, at Christmas she had gained four stones, and in December, 1903, I had a note to say that her digestion was perfect.

CASE 6.—The patient, a married woman, aged 36 years, was admitted to the Leeds General Infirmary on Sept. 28th, 1899, with a history that for ten years she had had stomach trouble, during which time she had lost three stones in weight. The symptoms had been intermittent but never completely absent during the whole of the time and for many months she had only been able to get relief after vomiting which occurred every day. The physical signs were very distinct and peristalsis was well marked and much increased by the use of the stomach-tube. When the stomach was washed out, after the first cavity had been thoroughly cleansed, the patient would suddenly retch and vomit a large quantity of foul material by the side of the tube, and as this contained no bile it clearly came from the second cavity. The second sign elicited was by filling the stomach with water, when the outline of the first cavity could be easily percussed. A third sign was found by filling the stomach with air, when the lower limit of the first cavity could be readily felt in the left hypochondrium; it became lost in the middle line and the stomach resonance could again be discovered to the right of the umbilicus. The stomach splash could always be elicited. Free hydrochloric acid was found in the stomach contents.

Operation was proceeded with on Oct. 5th. Numerous adhesions were found and detached between the stomach and abdominal wall, when two cavities were discovered separated by a long narrow isthmus two and a half inches in length, this being surrounded by dense cicatricial tissue. The pylorus was also much narrowed and thickened, it being also cicatricial. Gastroplasty was performed with some considerable difficulty on account of the great length of the stricture, and after this had been completed pyloroplasty was also carried out, but in neither case did I feel satisfied with the sutures, which were applied under tension. The patient was fairly comfortable after the operation and beyond a little regurgitation which was relieved by lavage on the third day no untoward symptoms followed, and a week later a note was made to say that the patient was doing well and altogether comfortable. At ten o'clock on the eighth day after operation she was suddenly seized with violent pain and the pulse rose to 120. In my absence Mr. R. Lawford Knaggs was summoned and after consultation with Mr. H. Littlewood it was decided to reopen the abdomen. The wound was found to be firmly healed, but on opening the peritoneal cavity air and bile-stained fluid escaped, due to perforation of the pylorus, some of the tense stitches having ulcerated through. Gastrorrhaphy was performed and the abdomen was washed out. Unfortunately, however, the shock was too great and the patient succumbed within a few hours.

CASE 7.—The patient, an unmarried woman, aged 27 years, whom I saw with Mr. E. Ellis of Halifax, gave a history of stomach symptoms lasting for eight years. There had been pain two hours after food and vomiting. A stone in weight had been lost in two years.

On March 21st, 1900, on opening the abdomen and exposing the stomach the latter was found to be hour-glass in shape, owing to cicatricial stricture three inches from the pylorus just admitting the tip of the little finger. Gastroplasty was performed by means of a bone bobbin. The patient made a good recovery and later I had a report to say that she was well and was several pounds heavier than before the operation. On Dec. 19th, 1903, Mr. Ellis wrote to say that she was in good health, looked well, weighed nine stones, and was able to digest her food quite satisfactorily.

CASE 8.—The patient, an unmarried woman, aged 29 years, had suffered from chlorosis due to overwork for years before the beginning of her stomach troubles four years previously, since which time she had had pain after food and occasional vomiting with hæmatemesis and melæna. Very thorough medical treatment had been followed out on several occasions in the way of rest and rectal feeding but without any benefit. There had been great loss of flesh.

On opening the abdomen on March 22nd, 1900, omental adhesions were discovered, these covering a puckered ulcer on the front wall of the stomach three inches from the pylorus where there was an hour-glass contraction which would just admit the tip of the little finger. Pyloroplasty was performed, a bone bobbin being used. The patient made a good recovery and returned home on April 30th. On May 9th she had gained several pounds in weight.

CASE 9.—The patient, a youth, aged 18 years, was seen on Feb. 24th, 1900, and gave the history that he had never been strong since an attack of pneumonia four years before and that he had had pain after food for two years, the pain usually coming on from one to one and a half hours after meals. Although close on six feet in height his weight was only 9 stones 8 pounds. He was not absolutely an invalid but he was unable to carry out any of his ordinary duties and was getting worse rather than better. The stomach was dilated, the lower border reaching midway between the umbilicus and the pubes. A stomach splash was very evident and there was well-marked tenderness over the pylorus. After two months' careful general treatment he had lost five pounds in weight and felt weaker.

Operation was performed on April 24th. Hour-glass contraction of the stomach was found four inches from the pylorus, there being a scar on the surface of the stomach at that point, showing that the cause was chronic ulcer. The stricture would only admit the tip of the little finger. Gastroplasty was therefore performed, the largest-sized bone bobbin being used. The patient made a good recovery from the operation but in November the stomach splash could easily be elicited as if the muscular power had not been regained. Lavage of the stomach and the administration of strychnine were advised. In December, 1903, I had a report to say that he was able to attend to his business every day, though he had still to take care in his diet and not to get over fatigued.

CASE 10.—The patient, a single woman, was seen with Dr. L. A. Mackenzie of Bradford. She was in a state of great exhaustion with extreme emaciation, the history being that she had had symptoms of gastric ulcer for 15 years and that for six years she had lived on liquid food in small quantity. She had been for a long time completely bedridden.

At the operation (which was performed on April 30th, 1900) the stomach was found to be extensively ulcerated and scarred, there being hour-glass contraction four inches from the pylorus just admitting the tip of the little finger. At this point there were signs of an old perforation that had been covered by omentum which was extensively adherent. The stomach was so bound down by adhesions that anterior gastro-enterostomy only was possible. The patient rallied well from the operation and progressed satisfactorily up to the twelfth day, when after a good night she expressed herself as feeling very well. About midday she complained of abdominal pain, suddenly became collapsed, and died a few hours later apparently from perforation, though a necropsy could not be obtained to verify this.

CASE 11.—A man, aged 44 years, was admitted to the Leeds General Infirmary on May 31st, 1900. He gave a history of stomach trouble for 23 years with occasional periods of good health, though recently the healthy intervals had been very short. Coffee-ground vomiting was a marked symptom. There was considerable loss of weight.

Operation was performed on June 7th. A large cicatricial surface two inches in diameter was discovered on the front wall of the stomach, forming an hour-glass contraction from two and a half to three inches from the pylorus. On incising this longitudinally the mucous membrane was found to be ragged and ulcerated for two inches on either side of the incision. Gastroplasty was performed over a bone bobbin. In this case no free hydrochloric acid could be discovered in the stomach contents. The proximal cavity was the larger, the distal being comparatively small. The patient made a good recovery and returned home on July 25th.

CASE 12.—Early in October, 1900, I was asked by Dr. T. B. Hearder of Ilkley to see a man, aged 52 years. There was a three years' history of pain and vomiting with epigastric tenderness and loss of flesh. On examination the stomach was found to be markedly dilated.

At the operation on Oct. 12th an hour-glass contraction was discovered near the centre of the stomach but the stricture was not extreme. Posterior gastro-enterostomy was performed and the patient made a good recovery. On March 4th, 1901, he wrote to say that he was quite well and that he had gained 1 stone 5 pounds in weight.

CASE 13.—An unmarried woman, aged 25 years, was admitted into the Leeds General Infirmary on Nov. 5th, 1900, with a history of stomach symptoms and pain and vomiting for three years. During part of the time she had been in hospital and under thorough medical treatment but without material benefit except of a temporary character.

Operation was performed on Nov. 15th. A large constriction was found in the centre of the stomach forming a characteristic example of hour-glass contraction, both cavities being dilated and the proximal being larger than the distal cavity. Numerous adhesions had to be separated, especially around the pylorus, and others between the stomach and colon. A posterior gastro-enterostomy was performed from which the patient made an uninterrupted recovery. She returned home on Dec. 11th. On April 9th, 1901, she returned to the infirmary on account of having had some recurrence of pain and vomiting, but under rest and careful dieting the symptoms completely passed off in three weeks and she was sent home, weighing seven pounds more than she did when in the hospital on the former occasion. During the three weeks when under observation she had no sickness and during the latter part of the time she was able to take ordinary food without discomfort.

CASE 14.—A man, aged 53 years, was admitted into the Leeds General Infirmary on Nov. 29th, 1900, with a two years' history of pain from an hour to one and a half hours after food. Vomiting was not a marked symptom until a few weeks before admission. His ordinary weight was 14 stones but on admission it was 10 stones 10 pounds. There were no signs of dilatation of the stomach and free hydrochloric acid was present.

At the operation on Dec. 6th an hour-glass contraction of the stomach was found three inches from the pylorus, there being considerable thickening of the stomach wall at that point; the proximal cavity was the larger. Posterior gastro-enterostomy was performed. He made a good recovery from the operation and returned home on Jan. 7th, 1901.

CASE 15.—On Feb. 13th, 1901, an unmarried woman was sent to me by Dr. J. Mackenzie of Burnley with a history of stomach trouble extending over several years. The attacks had come on about four times a year, lasting from six to eight weeks, when after starvation with rectal feeding she was relieved for a time. The stomach reached to the level of the umbilicus but after distension with carbon dioxide the greater curvature was two and a half inches below. The stomach splash was still well marked four hours after a meal. On distension the outline of the stomach appeared to be bilocular, there being some irregularity in the centre. The patient was very thin and feeble.

Operation was performed on April 2nd. A cicatricial contraction of the body of the stomach was found within an inch of the cardiac orifice, the stricture extending obliquely across the stomach. In this case the cardiac complement formed the smaller sac, the distal pouch forming the bulk of the dilatation felt before operation. There was spasm but no stricture of the pylorus. Gastroplasty was performed and the patient made a good recovery from the operation.

CASE 16.—The patient, a single woman, aged 49 years, who was seen with Mr. F. T. Hindle of Askern, had suffered from gastric symptoms for 20 years. Gastroplasty had been performed on July 28th, 1899, for hour-glass contraction, the constriction being at a point one-third of the stomach length from the pylorus. She had made a good recovery and had increased in weight so that at the end of the year she was quite well. Soon afterwards she began to complain of pain on movement and on straightening herself, as well as of discomfort and pain after meals, with flatulency, though she had not vomited. When she rested in bed she completely lost her symptoms and could take food well though directly she resumed the erect posture the pain recurred. There were tenderness and an indefinite swelling to the left of the middle line with a well-marked stomach splash on succussion. A diagnosis was made of perigastritis with adhesions to the anterior abdominal wall. After general treatment had been carried out for some time without any benefit operation was decided on.

On opening the abdomen on Jan. 24th, 1901, an old scar with a firm adhesion was found between the anterior stomach wall and the parietal peritoneum just above the umbilicus to the left. This firm adhesion produced little discomfort when the patient was recumbent, but when the body was erect it re-created the old hour-glass deformity with a difficulty in emptying the proximal pouch which was markedly dilated. The adhesion was separated and on invaginating the stomach wall so as to pass the fingers through the part that had been formerly stenosed the channel was found to have a wide calibre, so that the gastroplasty had been quite effective. It was found, however, that there was some narrowing of the pylorus though no absolute stenosis. A posterior gastro-enterostomy was therefore performed. The patient made an excellent recovery and left the surgical home at the end of three weeks. She was then five pounds heavier than at the time of operation and I had a report from Mr. Hindle on May 14th, 1903, to say that she was quite well in every respect.

CASE 17.—The patient, a single woman, aged 29 years, was seen with Mr. M. Bryson of York. She had been ill with epigastric pain for ten years. The pain had been constant with exacerbations and had been increased after food, though this was not a marked symptom. She had never vomited blood but had passed blood freely from the bowel on several occasions. She said that all her trouble dated from an attack of typhoid fever ten years before. She was extremely weak and very thin, only weighing 6 stones 11 pounds with her clothes on. On examination just above the umbilicus there was a well-marked tender swelling that seemed to be bound down by adhesions. It was feared that the tumour might prove to be malignant.

The abdomen was opened on Oct. 24th, 1901, by an incision one inch to the right of the middle line above the umbilicus, when a large tumour was discovered in the centre of the stomach, there being a dilated portion of the stomach on each side of this. The communication between the two cavities was a small channel surrounded by an indurated chronic ulcer. The induration extended along the lesser curvature of the stomach, where enlarged glands were felt. There were many adhesions between the stomach, the liver, the gall bladder, and the colon. Posterior gastro-enterostomy was performed. The patient made a good recovery and returned home. On Dec. 19th, 1903, I received a letter to say that she was quite well and that she had not had a bad symptom since her operation two years before.

CASE 18.—The patient, a single woman, was seen with Dr. W. B. Mercer of Ripponden on account of wasting associated with pain after food and vomiting, the patient having had stomach symptoms for over two years. She was very thin, only weighing 5 stones 10 pounds, and was feeble and anæmic. The stomach was markedly dilated and there was a hard swelling in the centre of it. She had tried medical treatment very thoroughly for the greater part of the time since the first attack, but had never been long free from pain.

On March 7th, 1902, the abdomen was opened and an hour-glass stomach was found, with well-marked, hard, cicatricial tissue about the centre. As the narrowing of the channel was not extreme and the pylorus was patent a posterior gastro-enterostomy was done by connecting the first cavity of the stomach to the jejunum. The patient made a good recovery and when she left the surgical home had gained weight. After her return home there was some recurrence of pain, but she was able to resume her duties and when I heard later of her Dr. Mercer said that he had not seen much of her for the last two months. A subsequent report received in December, 1903, was to the effect that

the patient had relapsed. From the history the recurrence of trouble is probably due to adhesions but the patient is unwilling to have anything more done.

CASE 19.—The patient, a married woman, aged 41 years, was seen with Dr. T. Robinson of Kensington. The patient gave a seven years' history of stomach trouble in the shape of painful indigestion, though after the first two years the symptoms had clearly pointed to gastric ulcer. She had been relieved by medical treatment up to 11 months ago, when there was a recurrence of pain after food with loss of flesh. At Christmas she had a free hæmatemesis and a second attack occurred a week later. On Jan. 7th, 1903, a swelling of the epigastrium could be felt of about the size of a walnut, it being moveable and tender. On May 18th a third attack of hæmorrhage occurred and from that time onwards she had been steadily losing flesh, so that her weight had diminished from 9 stones 4 pounds to 7 stones. When she was seen there was a well-marked tender tumour in the epigastrium. The patient was complaining of great weakness and she was profoundly anæmic. There was no ascites and the legs were not œdematous.

On Nov. 21st, 1903, the abdomen was explored through an incision to the right of the middle line above the epigastrium, when the stomach was found to be adherent at the front over an area of about the size of a five-shilling piece. On separating this a small aperture was discovered where perforation had occurred. The centre of the stomach was occupied by a hard cicatricial mass dividing the organ into two cavities. The index finger could be passed with difficulty from one cavity to the other. The glands along the lesser curvature were enlarged but discrete and other glands were found at the back of the stomach and in the great omentum. The proximal cavity was connected to the jejunum by posterior gastro-enterostomy, a bone bobbin being employed. On account of the great induration of the tissue surrounding the point of perforation it was impracticable to apply sutures. An omental graft was therefore detached from the great omentum and stitched into position so as to close in the perforation. Recovery was uninterrupted and the wound healed by first intention. She was able to take food from the first day and soon began to put on flesh. When she left the nursing home on the twenty-fourth day she was looking well and expressed herself as feeling better than for two years. She had gained several pounds in weight and could eat anything in reason.

CANCEROUS HOUR GLASS STOMACH.

CASE 20.—The patient, a married woman, aged 36 years, was sent to me by Dr. W. W. Chamberlain of Rawdon on Sept. 21st, 1900, and was admitted into the Leeds General Infirmary. There was a history of daily vomiting for four months and as the vomiting always occurred within an hour of meals the patient was reduced to the last degree of weakness. A tumour had recently appeared and was readily palpable on the right of the umbilicus. As she was so weak she was put on rectal feeding for a few days but without improvement and operation was decided on as a last resort.

Operation was performed on Sept. 28th. An annular cancer of the stomach was found three inches from the pylorus. It had considerably encroached on the lumen of the stomach, so that the stricture would barely admit the passage of the finger. The proximal cavity was very much dilated but the cavity between the growth and the pylorus was not dilated. An anterior gastro enterostomy was therefore performed as there were some extensive adhesions and it was thought that time might be saved by the anterior method. Regurgitant vomiting followed and persisted until the third day, bringing her almost to the verge of death. Food and stimulants were then given in large quantities and from that time there was no more trouble with vomiting, but on Oct. 7th (the ninth day) she became collapsed and died in the evening.

CASE 21.—The patient, a married woman, was sent to me by Mr. T. F. Forster of Dalton-in-Furness on Jan. 24th, 1901, with a moveable tumour in the epigastrium that had been noticed three weeks previously; there had been no vomiting, although indigestion, pain an hour after food, and loss of flesh and strength had been noticed since August, 1899. She weighed seven stones, having weighed eight stones or more previously to her illness. The tumour appeared to be of the size of a tennis ball, was free from tenderness, and could be made to move across the abdomen from one side of the umbilicus to the other. On distending the stomach with carbon dioxide it reached nearly to the pubes on the left side, but very little distension was noticed on the right beyond the tumour.

The patient was admitted to the Leeds General Infirmary and on Jan. 31st on exposing the stomach a tumour was found involving the whole circumference a short distance from the pyloric end, so that between the pylorus and the tumour a small second stomach cavity existed, the dilatation being formed entirely by the cardiac complement. The tumour was completely excised and the distal and proximal cavities were united end to end over a bone bobbin. Glands were removed from the lesser and greater omentum. Recovery was uninterrupted and the patient left the hospital before the end of a month, having regained the weight lost during the week after operation with an additional pound. The tumour proved to be cancerous. A report was received in 1903 to say that the patient was in good health and well nourished.

CASE 22.—A man, aged 62 years, was sent to me by Dr. James Gardner of Burnley suffering from a moveable tumour, thought to be cancer of the stomach, which had been noticed for a month but which had been preceded by stomach symptoms, chiefly pain after food and slight vomiting, for quite a year. There had latterly been some slight coffee-ground vomit but no large amount of blood had been brought up at any time. The tumour was not tender and could be pushed up under the left and moved over to the right costal margin. A stomach splash was well marked on the left of the tumour and on distending the stomach with carbon dioxide the lump was pushed over to the right. The vomit was acid from the presence of lactic acid, but no free hydrochloric acid could be found. Pylorectomy was advised and the patient was admitted to the Leeds General Infirmary, being then in an extremely weak condition.

Operation was performed on Nov. 15th, 1900. On opening the abdomen a mass of growth was found in the centre of the stomach, forming a ring of cancer and leaving a cavity on its proximal and distal sides, the cardiac cavity forming the dilated stomach where the splash on succussion was felt. Dr. D. Seaton, who was giving the anæsthetic, advised that the patient was too feeble to bear a prolonged operation and a colleague also confirmed the fact that the pulse could be barely felt at the wrist. A posterior gastro-enterostomy was therefore only performed, a bone bobbin being employed. The patient soon rallied and made a good recovery, gaining flesh and weight and expressing himself as very well. For his further history see Case 23.

CASE 23.—The patient had gastro-enterostomy performed on Nov. 15th, 1900. He seemed to be so well and had gained strength so rapidly that it was felt desirable to give him the chance of cure by completely removing the growth, and after fully explaining to him his condition he gave consent.

Operation was proceeded with on Dec. 20th, 1900. The radical operation of removing the growth by partial gastrectomy was performed, about half of the stomach being removed in order to leave a wide margin of healthy tissue between the growth and the wound. Union was effected by suturing the cardiac and pyloric portions together over a bone bobbin, catgut being used for the mucous and celluloid thread for the serous sutures, the whole operation being completed within the hour. No glands were felt beyond the resected area. Recovery was uninterrupted and he returned home within the month, eating and enjoying food and having gained considerably in weight. He lived for 16 months and for nearly the whole of the time took his food well and until January, 1902, retained his normal weight.

It will be seen that there are 23 cases of which 19 were simple and four were malignant. Of the simple cases 11 were operated on by gastroplasty alone and all the patients recovered; one by gastroplasty and pyloroplasty combined, the patient dying, as did the one in whom anterior gastro-enterostomy was performed. Of the six patients treated by posterior gastro-enterostomy all recovered. Of the four cases of cancerous hour glass stomach three patients recovered, two of the cases being treated by partial gastrectomy.

Park-crescent, Portland-place, W.

Mr. M. I. Finucane, M.R.C.S. Eng., has been nominated by the St. George's, Hanover-square, board of guardians as one of its representatives on the Metropolitan Asylums Board.

OCHRONOSIS:

THE PIGMENTATION OF CARTILAGES, SCLEROTICS, AND SKIN IN ALKAPTONURIA.

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HERETOFORE ochronosis has been a pathological curiosity; the two cases here reported in alkaptonuria show that it may have interesting clinical features.

In 1866 Virchow[1] described a remarkable blackening of the cartilages in the body of a man, aged 67 years, who had died from aneurysm. The colour was coal black (as shown in his figures), not ochre-coloured or yellow; but it was not ordinary melanosis, and recognising the unique character of the condition Virchow called it ochronosis. Years passed before a second case was described by Boström,[2] that of a woman, aged 44 years, who had died from strangulated umbilical hernia. The same ebony-black discolouration of the cartilages was present. Then in 1892 Hansemann[3] described a third case, the patient being a male, aged 41 years, with general œdema and aneurysm of the left ventricle. He had had melanuria for 18 years. In a recently issued number of the *Deutsches Archiv für Klinische Medicin* Langstein and Meyer state that the examination of long-kept urine shows that this was not a case of alkaptonuria. There was no reduction of copper and no homogentisic acid could be found. Heile[4] recorded the fourth and fifth cases, one being that of a woman, aged 36 years, who had died from peritonitis after ruptured tubal pregnancy, and the other that of a woman, aged 52 years, with chronic leg ulcer and mitral valve disease. The sixth case was reported by Hecker and Wolf.[5] The patient was a man, aged 73 years, with long-standing melanuria and chronic endocarditis. In the eyes on each side some three or four millimetres from the corneal border there were black spots on the sclerotics. The urine was sometimes normal in colour when passed and sometimes brownish. It became black on standing for a day or two. The darkening was present for 11 years but was not constant. Blood, bile-pigment, indican, pyrocatechin, and drug pigments were excluded. It is distinctly stated that the urine did not reduce copper. Hecker and Wolf came to the conclusion that the reactions were those of melanuria. Post mortem there was the ordinary ochronotic blackening of the cartilages, arteries, &c. I am indebted to Dr. A. Garrod for this abstract from the *Festschrift* of the Dresden Hospital and he states that it is pretty certain this was not a case of alkaptonuria. The seventh case is recorded by H. Albrecht,[6] to whom is due the credit of suggesting the association of the condition with alkaptonuria. In a man, aged 47 years, who had died from pulmonary tuberculosis, the urine was dark-coloured and reduced the sulphate of copper, but the presence of alkaptonuria was not proved, for no homogentisic acid was obtained from it. After a week in the hospital he died and the necropsy showed a general ochronosis. A point of special interest was the grey-blue colour of the inner part of the ears, as if due to dilated veins.

I am able to report two cases of ochronosis in alkaptonuria in which the condition could be recognised clinically by the deep pigmentation of the cartilages of the ears and of the sclerotics, and in one by a remarkable ebony-black discolouration of the skin of the nose and cheeks.

CASE 1.—A man, aged 57 years, consulted me on Jan. 16th, 1895, for diabetes and rapid action of the heart. He had been an active business man and a successful politician. I did not question the existence of diabetes, as during a prolonged residence in Europe he had been under the care of several eminent colleagues in Berlin, Paris, and London, one of whom had referred him to me. After repeated examinations Dr. Futcher determined that the copper-reducing substance was not glucose and the case formed the basis of his paper on alkaptonuria in the *New York Medical Journal* in 1898. I need not refer in any detail to the condition of the urine in this case other than to state that it is never black when passed but darkens after a few hours. At my first examination I was impressed by a remarkable appearance of the sclerotics which showed small V shaped areas of deep pigmentation near the cornea. I thought it might be the result of old hæmorrhages, but the patient said that the condition had gradually come on and that it had annoyed him at first but that he now thought nothing of it. There was also a slight pigmentation of the nose and on the cheeks which looked like very thickly set comedones. As he left the room my attention was directed to the deep blue colour of the inner surface of the ears. I have seen the patient at intervals during the past eight years and have taken an increased interest in the deepening pigmentation of his face, eyes, and ears. I searched the literature at intervals for an explanation but without avail and I consulted Dr. de Schweinitz and Dr. Harry Friedenwald with reference to the pigmentation of the sclerotics. It did not seem to conform with any of the reported cases of this rare condition. Lately the patient came under my care in the private ward of the Johns Hopkins Hospital for anæmia and a weak, irregular heart. The pigmentation has extended considerably in the past six years and is now as follows.

Sclerotics.—The exposed V-shaped portions are of a deep black colour, not in the entire extent, as there are areas of normal colour. The staining is in the sclerotic coat, not in the conjunctiva, and it does not extend to the covered parts of the eyeballs. Of late years it has become much darker; there was a brownish tinge in places which has now almost disappeared. There is nothing special to be noticed about the other parts of the eyes. The tarsal cartilages are not affected.

Ears.—From behind and along the free border of the helix the skin looks normal but when looked at from inside there is a remarkable blue-black discolouration, exactly like that produced by dilated veins, as Albrecht remarked. It is deepest in the concha and extends along the antihelix but not to the helix. I did not recognise at first that the pigmentation was in the cartilage. In certain positions and when the light falls into the ears the colour at once attracts attention. It has extended and deepened in the past five years.

Face.—Over the nose and the cheeks, in very much the butterfly distribution of lupus erythematosus, the skin is of a coal-black colour. At his first visit I thought that it was an unusual distribution of very black comedones. The line over the nose is narrow but widens and passes to the cheeks and extends over the malar bones and along the zygomata. There is no thickening of the skin, which can be picked up easily. The colour is remarkable, quite unlike anything seen in the skin in the ordinary pigmentary changes, but at first glance rather suggesting powder marks. Where present it is uniform, not patchy. It is nowhere else on the skin but Dr. Futcher tells me that small black spots have begun to appear on the back of the hands. One of this patient's sons has alkaptonuria.

CASE 2.—The patient is a brother of the patient in Case 1, his age being 49 years. This was one of the first cases of alkaptonuria described in the United States of America. He had applied for life insurance and had been rejected repeatedly. Dr. Marshall, of the University of Pennsylvania, studied the urine carefully and called the new copper-reducing substance glycosuric acid. The man remained quite well after he had got over his fright about diabetes. When the first patient was in the hospital this brother visited him frequently, and what was my surprise to find that he too had pigmented sclerotics and ears. The patches in the eyes were small, two vertically placed bands about five millimetres from the corneo-sclerotic junction. They resembled in size and appearance those in his brother's eyes when I first saw him in 1895. The blue-black colour in the ears, not nearly so marked as in Case 1, was confined to the fossæ and could not be seen from behind. The skin was normal, but through it appeared this remarkable leaden colour as though there was a diffuse nævus. The patient had noticed the pigmentation for several years. He was morbidly sensitive about it and it was with the greatest difficulty that I could induce him to come to the clinical laboratory where Dr. Emerson determined the persistence of the alkaptonuria. This patient died in April, 1903, from pneumonia after an

[1] Virchow's Archiv, 1866, Band xxxvii., p. 212.
[2] Virchow's Festschrift, Band ii., 1891, p. 177.
[3] Berliner Klinische Wochenschrift, 1892, Band xxix., p. 660.
[4] Virchow's Archiv, 1900, Band clx., p. 148.
[5] Festschrift, Dresden Hospital, 1899, p. 325.
[6] Zeitschrift für Heilkunde, 1902, Band xxiii., p. 368.

illness of a few days. There was no post-mortem examination.

These brothers presented a singularity in gait, walking with a slight bend or incline at the hips. At first I thought the elder brother had had spinal disease but the spine was straight and the motion of the hip-joints was perfect. He had had rheumatic pains in many joints and there were several Heberden's nodes.

Dr. Ogden of Milwaukee writes with reference to his alkaptonuria patient, whose condition was described in the *Zeitschrift für Physiologische Chemie*, 1895, that "the colour of the inside of each concha is a pearly, light-greyish lead-blue, much the colour of the inside of some of our common mussel shells." This is evidently staining of the cartilages similar to that which exists in the two patients here described and in Albrecht's case.

There is no question that these are cases of ochronosis in long-standing alkaptonuria and they support Albrecht's suggestion that the pigmentation of the cartilaginous tissues is associated with the remarkable disturbance of metabolism which we have heretofore only recognised by the changes in the urine. The condition is thus brought within the range of the clinical physician. Fortunately it is not of much moment, so far as we know, and in the recorded cases there have been no symptoms directly due to the alkaptonuria. Dr. Garrod informs me that there are only two recorded post-mortem examinations in alkaptonuria cases. In Fürbringer's case[7] the patient, a male, aged 29 years, died from phthisis. There is no mention of the duration of the alkaptonuria. The necropsy was made by Thoma and the description is complete. Blackening with alkalies was looked for in the body fluids, but there is no mention of blackening of the cartilages. In von Moraczewski's case (a woman, aged 43 years) the alkaptonuria was supposed to be of late development. There is no mention of the cartilages in the protocol of the post-mortem examination. Some of the cases of ochronosis have not been in alkaptonuria and, as Dr. Garrod writes, it looks as if possibly even the very few cases described may belong to two distinct classes. Of the three cases in which black urine is mentioned two at any rate seem not to have been in alkaptonuria, and in Albrecht's patient Zdarek could not find in the fresh urine either homogentisic or uroleucic acid.

Baltimore, U.S.A.

SOME SIMPLE EXPEDIENTS IN PHYSICAL THERAPEUTICS.[1]

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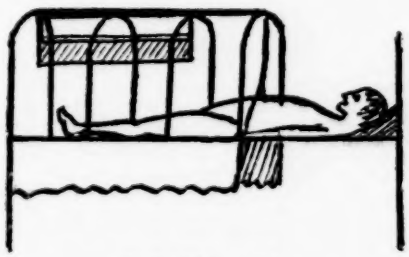
IN the whole range of therapeutics there is no more important subject than the proper and efficient treatment of pyrexia. Without, however, entering upon an exhaustive consideration of so important a theme it will be allowed that while minor and transient degrees of fever can safely be left alone or dealt with by the various antipyretic drugs, and the more serious forms of hyperpyrexia demand rigorous application of cold in the form of bath or ice pack, there remains an intermediate class of continuous fever in which the repeated use of either of these modes of treatment is undesirable. It is only necessary in explanation of this statement to say that all internal antipyretics have a more or less depressant action on the heart and their repeated administration is apt to induce collapse or cardiac failure in the very cases in which steady heart action affords the main road to recovery. On the other hand, while the application of cold to the surface, acting as it does as a tonic to the circulation, effects the reduction of temperature without involving this risk, many of the methods employed for the purpose, such as sponging, packing, and bathing, though undeniably efficacious and wholesome, possess undoubted drawbacks in practice. The use of water in any way involves trouble and difficulty on the part of attendants, not always skilful when available, and such proceedings, adapted as they must be to the severity of the case and the endurance of the patient, and liable if mismanaged to serious mishap, necessarily involve the presence of the medical attendant for a longer period and on more frequent occasions than may be convenient or even possible.

Taking these considerations into account, especially in such a state of continued pyrexia as that of typhoid fever, the system known as *cradling* offers undeniable advantages. It consists merely in arranging a sort of tent over the bed in which the patient lies naked or very lightly covered. The two ends may be left partly open to encourage a current of air or the effect may be intensified by suspending a trough inside containing broken ice. In hospital the tent is usually made of metal hoops covered by a sheet or blanket but in an ordinary bedstead a rod or cord extending horizontally about two feet above the patient and attached to the head- and foot-pieces is all that is necessary. In this way the surface of the body can be exposed indefinitely to an atmospheric temperature of about 60° F. which can be easily regulated, the natural cooling effect of radiation and evaporation being thus enhanced. The great advantages of this method are its simplicity; its remarkable efficiency, the continuity of effect being not only of value in continued febrile states but in reducing high temperatures; its comfort to the patient; the avoidance of the repeated shock and disturbance of applying water; and the freedom and security it gives to the medical attendant who is not called upon to cope with periodical alarming temperatures but can leave the nurse to meet the variations of the thermometer within a reduced range by regulating the draught or by applying ice or a blanket within the tent as indications require (see Fig. 1).

FIG. 1.



Cradle with ice trough.

In dealing with children whose consent and collaboration in times of sickness are less easily obtained than those of adults, as also in delirium and in highly nervous subjects, cradling is of special service and may be continued for ten or 14 days if necessary.

While considering the means of reducing temperature generally it may be useful to mention a simple method for keeping the head cool and controlling the circulation in cases of injuries and diseases of that part. In meningitis, skull fractures, and concussion, and sometimes in the delirium of fever, it has been the practice to apply cold to the head by means of an ice cap or simple bag, or perhaps only by evaporating lotion to the forehead. It is scarcely necessary to remind anyone that, with perhaps the exception of the last named, there is little satisfaction to the patient in any of these, and in unconsciousness or delirium it may exceed the powers of the nurse to maintain any contact at all. Moreover, the regions of the head to which these means are applied—the forehead and vertex—are already the cooler on account of their position, being in the periphery of the circulation and in addition freely exposed to the effect of radiation and evaporation. The part to which cold can be more profitably applied is the occiput and the nape of the neck and this can be done without difficulty or discomfort by using as a pillow an ordinary rubber water-bottle filled with ice-cold water and crushed ice and having a smooth towel pinned round it as a pillow-case. The substitution of this for the troublesome and inefficient appliances hitherto recommended in head cases has justly earned the gratitude both of patients and nurses and is particularly satisfactory to the medical attendant, as when ordering his patient "cold to the head" he can see that he gets it. In the delirium of fever, besides the local effect, this method has the great advantage of notably reducing the temperature and so relieving the condition on which delirium chiefly depends. For the feverish patient a constantly cool, smooth, and elastic water

[7] Berliner Klinische Wochenschrift, 1875, Band xii.

[1] A paper read before the Brixton Medical Society.

pillow is an absolute luxury, and while he is lying flat as in typhoid fever it is more convenient than an ordinary bolster. If filled with water containing shaved or finely crushed ice the bottle does not require refilling more than once in from four to six hours. The tension can be regulated to a nicety by the quantity used and it is as well to exclude air, both to insure the better conduction of heat and to avoid gurgling noises on movement of the head.

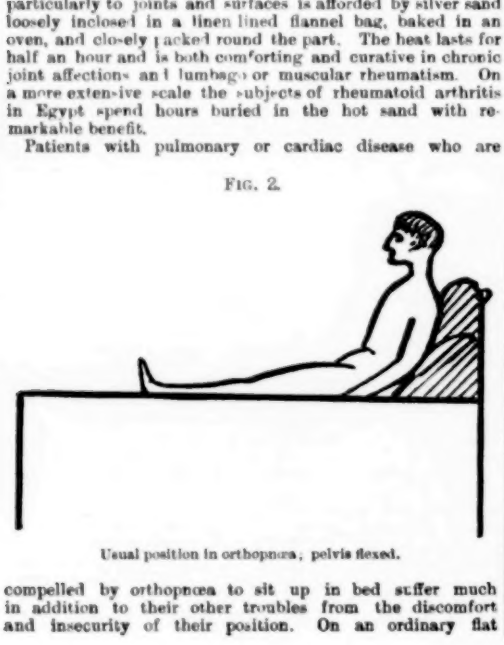
Before bidding good-bye to the rubber water-bottle it may be worth while recalling what many patients have discovered for themselves, that when hot it supplies a convenient and efficient substitute for a poultice or fomentation, more particularly in cases of colic or local pain, though, of course, the heat is dry instead of moist. Owing to its collapsable nature the rubber bottle, suspended, inverted, and fitted with a suitable arrangement of tubing, has been employed as a reservoir in administering douches of various kinds; this might possibly be useful in an emergency.

Having devoted the foregoing to a consideration of the application of cold in the treatment of certain morbid conditions, it seems appropriate to mention here some ready methods of applying heat and the diseases in which it is useful. Radiant heat from a red-hot coal fire, *pace* asseverations to the contrary, is effective in subduing the almost unbearable irritation of chilblains. This irritation is at its worst during about two hours in the 24, and can be controlled for that occasion by holding the affected part for a minute or two as near the fire as can be tolerated with considerable fortitude; steeping in very hot water approximates to this. The trouble recurs the next day but it can be abolished in the same way, and after three or four repetitions a cure is effected. Relief of the itching in psoriasis and eczema has also been found by many patients to follow exposure of the part to strong heat of a fire, a lamp, or water, and it is recorded of the Emperor Napoleon I. that he spent much time sitting in hot baths for the relief of a life-long eczema of the thighs which caused him serious torment. There is probably nothing which produces such unbearable irritation as pruritus ani, rendered more difficult to relieve by the comparative inaccessibility of the part. This, however, may be mitigated by the use of hot douches, the temperature being borne by some as high as 130°. Where this cannot be arranged the application of a hot cone such as an inverted soda-water bottle filled with hot water will serve instead. Though in all these cases relief is only temporary it is greatly valued by the patient, and the rest from friction locally and respite to the nervous system ultimately lead to cure.

Another simple and effective means of applying dry heat particularly to joints and surfaces is afforded by silver sand loosely inclosed in a linen-lined flannel bag, baked in an oven, and closely packed round the part. The heat lasts for half an hour and is both comforting and curative in chronic joint affections and lumbago or muscular rheumatism. On a more extensive scale the subjects of rheumatoid arthritis in Egypt spend hours buried in the hot sand with remarkable benefit.

Patients with pulmonary or cardiac disease who are

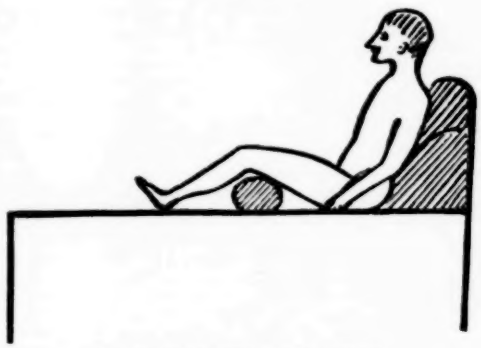
FIG. 2.



Usual position in orthopnœa; pelvis flexed.

compelled by orthopnœa to sit up in bed suffer much in addition to their other troubles from the discomfort and insecurity of their position. On an ordinary flat mattress, and perhaps more so on a feather one, the pelvis is flexed and the weight is received obliquely on the lower part of the sacrum and coccyx which, owing to its irregularity and the thinness of its covering, soon becomes sore (Fig. 2). Moreover, the body, supported only by what engineers term "skin friction," tends to slide away from support, the clothes become "rucked," and the patient is only maintained in his precarious position by muscular effort and the frequent attentions of the nurse. By placing a firm bolster across the middle of the bed below the mattress a double-inclined plane can be formed like a Singapore chair which with the pillows or bed-rest affords thoroughly comfortable and firm support (Fig. 3). The

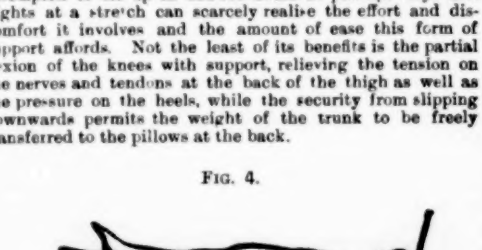
FIG. 3.



Position with bolster under the mattress.

weight of the body is then received through the ischial tuberosities in a line with the spine without tendency to displacement and its attendant troubles or any necessity for muscular effort. The abolition, too, of the flexure of the lumbar spine does away with the consequent compression of the abdomen and the sense of suffocation and oppressive flatulence which so often afflict patients in this position. The bolster may be put in position while making the bed, otherwise it is best arranged by lifting the lower half of the mattress and pushing it up from below till it meets and supports the buttocks. Those who have not attempted to sit up in bed for hours or perhaps days and nights at a stretch can scarcely realise the effort and discomfort it involves and the amount of ease this form of support affords. Not the least of its benefits is the partial flexion of the knees with support, relieving the tension on the nerves and tendons at the back of the thigh as well as the pressure on the heels, while the security from slipping downwards permits the weight of the trunk to be freely transferred to the pillows at the back.

FIG. 4.



Feet raised in pleural effusion. A, Level of fluid.

A very simple method of affording support to a patient sitting up for brief periods after an enfeebling illness is to pass an ordinary roller towel round the back below the armpits and to make it fast to the foot of the bed. This of course does not prevent him slipping down and involves more confinement of the chest than one suffering from respiratory difficulty would tolerate, but as a simple

mechanical support in uncomplicated convalescence it is often useful.

While considering the decubitus in pulmonary disease I would allude to the benefit in certain cases of pleurisy with effusion of raising the foot of the bed about 12 inches, so as to make the shoulders the lowest point, the patient lying supine or on the affected side (Fig. 4) The position is perfectly comfortable and quite easy to maintain continuously, the head being raised on an ordinary pillow not too high. The cases in question are those of pleurisy with effusion in which the fluid continues to rise to the top of the chest, recurring after tapping, and which are usually unaccompanied by pain though there is some fever. In these instances experience shows that the pleurisy is at the upper part of the chest and is probably always associated with a tuberculous lesion in the upper lobe. These at least are the cases of which I am now speaking. In ordinary circumstances the fluid poured out naturally gravitates to the lowest part of the pleura; towards the diaphragm if the patient is up, or distributes itself over the back if he lies in bed In either case it flows away from the seat of inflammation in the upper lobe and incapacitates the lower and presumably healthy portion of the lung, by its bulk also displacing the heart and mediastinum and so limiting the expansion in some degree on the sound side Certainly, these patients apply for aid on account of dyspnœa rather than for any other symptoms. By the time the fluid has mounted to the dome of the pleura where it might do some good by bathing and separating the inflamed surfaces and collapsing and resting the diseased area of lung, it is usually considered necessary, on account of the dyspnœa combined with the physical signs of a full pleura, to perform paracentesis, and the chance of natural relief for the local inflammation is lost. With a full pleura and dyspnœa there would be scarcely two opinions as to the necessity for tapping the chest, but after relief has been so obtained, or in cases where the condition has been recognised in an earlier stage, decided benefit results from this position. The temperature falls and the exudation ceases, so that subsequent tappings are not required and recovery is more rapid. The ultimate effect on the pulmonary lesion is probably favourable; the treatment is, at all events, in accord with the generally received opinion of physicians that functional inactivity and collapse due to the presence of effusion round a tuberculous lung tend to arrest the progress of phthisis and should not be unnecessarily interfered with. Whether there is a lessened tendency to the formation of adhesions it is difficult to say, but undoubtedly adhesions are infinitely more common in the upper half of the pleura, usually the dry areas, than in the lower half, the usual site of accumulation of fluid. Of course there are many instances of pleurisy accompanied by pain and friction at the base followed by effusion, both tuberculous and otherwise, but of these I am not now speaking.

The greater freedom of movement in the lower as compared with the upper half of the chest probably accounts for the greater frequency and severity of pain where the lower part is affected by pleurisy. On lying down, however, expansion of the upper lobes increases at the expense of the lower and this change is probably answerable for both the occurrence of pleuritic pain and the constant exacerbation of cough so notable in the subjects of pulmonary tuberculosis on assuming the recumbent position. In addition to posture the movements of the arms have a decided influence on expansion and contraction of the chest and after the febrile period rhythmic exercise, as in tolling a bell, definitely accelerates absorption of fluid from the pleural cavity. The influence of violent exertion in inducing dryness of serous cavities is familiarly illustrated by a "stitch in the side."

Enteroptosis.—A condition taken into account in recent years, though formerly overlooked or regarded as hardly beyond the bounds of the normal, is that laxity of attachment of the abdominal viscera which leads to their displacement on assuming the erect position, this being attended by a sensation of dragging and various functional disturbances. When this affects the kidneys only, and particularly when unilateral, a remedy is found in artificial fixation by operation. There are, however, many instances of the kind in which this is not resorted to and where the looseness extends to many or all the viscera operation is practically out of the question. If these patients, who, so far as I know, are all women, are to have any ease apart from the recumbent posture some form of mechanical support to the abdomen is necessary. Various forms of belts and pads are employed, but comparatively recently a sufficient number of cases of this sort have been submitted to one particular form of treatment to prove its general value and applicability. This consists in applying a nearly rigid support to the anterior wall of the abdomen by means of plates of sheet lead, trusting to the elasticity of the contained gases to furnish a resilient padding to the solid organs and to distribute the pressure exerted. To prepare these plates a pattern is first cut in paper by shaping a piece to cover the entire front from loin to loin and ensiform to pubes, taking care to leave a space of half an inch at the bony points and margins. By folding along the middle and trimming symmetry is assured and by cutting off the folded part an inch wide sufficient space is allowed for the edges to come together without overlapping. These patterns are then cut out of five-pound sheet lead and sewn into brown holland cases, which are stitched to the inner aspect of the corsets after temporarily adjusting with pins in the proper position. The corsets should be long as the two plates are liable to bend and to crack if they extend below them. The apparatus should be applied carefully before the patient arises from the recumbent posture so as to apply the pressure while the organs retain their normal position; the patient can then rise and get about without displacement occurring By this means it is certainly possible for a woman to get up at once and to go about her ordinary avocations in comparative comfort, free from the disability, pain, and vomiting which without such aid force her to maintain a recumbent position. The steady retention of the viscera in their proper place and the improved nutrition and health that ensue usually enable the patient to dispense with these artificial supports after three or four months, though in the mean time they may require renewing. It is useful therefore to retain the original paper pattern or a copy. As the plates are worn they adapt themselves to the figure, becoming more comfortable and effective, and should not therefore be straightened out when removed at night. Considering the difficulty of making any suggestion for the relief of enteroptosis and the great disability it involves this simple and harmless method will prove a welcome aid.

Reflex inhibition.—Many people are aware that pressure about the bridge of the nose or between the eyebrows will arrest an inconvenient sneeze, but it is not so generally known that gentle massage of the cricoid cartilage will usually arrest hiccough, especially in infants and young children in whom it most frequently occurs. So simple a proceeding could scarcely be expected to stop this distressing symptom in its severe form dependent on serious organic disease of the abdomen, but as a means of relieving the temporary attacks due to gastric disturbance, such as those ensuing on the ingestion of hot condiments, it is very efficacious. I have myself frequently found it of practical service while attending children. Stimulation of Arnold's nerve in the external auditory meatus or behind the ear is also effective.

Some forms of vomiting can be checked by counter-irritation of the epigastrium by means of a blister or a mustard leaf or plaster. It may be worth mentioning that the least disagreeable mode of obtaining a rubefacient effect with mustard is to rub the dry flour into cotton wool and to apply this to the skin closely covered with oil-silk, when the natural moisture of the skin gradually brings the sulphocyanate of allyl into action, producing a mild calefacient effect which can be tolerated for several hours if necessary with very slight discomfort. Physiologically any peripheral irritation exerts a depressing effect on the action of the heart and the nervous mechanism of heat production, particularly when the temperature is above normal, and I can recall several instances of typhoid fever in which this means of simultaneously checking vomiting and reducing temperature has proved of immediate service. Considering how inappropriate many remedies for vomiting are, which involve ingestion and digestion by an organ which can neither retain nor absorb, any indirect method such as this will often afford useful help where the long list of anti-emetics are disqualified at once simply because they are internal remedies. Until quite recently we scarcely possessed an alternative to these, saving the subcutaneous injection of morphine, the remote effects of which often forbade its employment; no apology therefore is needed for mentioning another and quite new one though not actually

germane to my present text. This is the continuous or repeated inhalation of oxygen. As to the rationale of the treatment I am not aware that physiologists have expressed an opinion, unless it is to suggest a parallel to the state of apnœa. I can, however, testify from its frequent employment in various forms of persistent vomiting—functional, reflex, and organic—that, so far, no means has proved so uniformly effectual. The inhalation of oxygen, and there is little trouble now in obtaining a cylinder, has this great advantage: it is perfectly harmless under all conditions and its administration may be repeated as often and continued as long as may be necessary and by comparatively inexperienced hands. It requires no effort on the part of the patient beyond that of ordinary respiration and involves no suffering or after-effects of a disagreeable character. Being administered by the lungs it not only acts independently of vomiting, which may continue for a time, but is peculiarly serviceable in such cases as those of gastric neurosis, irritability, inflammation or ulcer, in which it is undesirable or useless to introduce anything into the stomach, or after laparotomy where, in addition to this, retching is particularly obnoxious on account of the strain on the abdominal wound. Perhaps the most notable instance of its utility that could be offered was that of a nurse recently under my care for perforated gastric ulcer, involving laparotomy and suture of the stomach, where nothing could be given by the mouth and where the oxygen speedily arrested the vomiting following the anæsthetic and a recurrence some days later.

Other examples of reflex action, such as the contraction of the uterus following manipulation of the breast or distension of the vagina, sometimes contributory in accelerating labour or arresting post-partum hæmorrhage, are too familiar to need mentioning; as is the effect of dilatation of the anus or distension of the rectum in exciting contraction and evacuation of the colon. There is, however, a well-established reflex inhibition of the detrusor urinæ, illustrated in physiology by the arrest of micturition on stimulation of the sciatic nerve and in clinical experience by retention of urine, usually inseparable from operations about the anus and perineum. Apart however, from direct interference with the sciatic nerve, the effect of stimulation of its branches by pressing or pinching the skin below the buttock, in diminishing the desire for micturition, is readily demonstrated and may well be turned to account in dealing with cases of irritability of the bladder of nervous origin, and those more numerous and troublesome instances of enuresis in children for which there are so many remedies and so few cures, where a blister or even a calefacient plaster, made by moistening ordinary strapping with tincture of cantharides, would probably exercise sufficient restraint.

Internal hæmorrhage.—It is fortunately a very rare event for sudden internal hæmorrhage to prove immediately fatal unless due to the rupture of an aortic aneurysm, but it sometimes happens that before it is arrested by the occurrence of fainting and lowered blood pressure either so much blood has been lost as to involve tardy convalescence or the hæmorrhage, of little consequence in itself, causes serious damage to the organ in which it escapes, as occurs in the brain and lungs. It has been urged in such cases that it were better to induce syncope and cessation of hæmorrhage, either continuous or recurrent, by phlebotomy than to permit the continuance of the internal hæmorrhage at the risk of important tissues. But where such loss is already threatening life one naturally hesitates to induce further loss by other means, and the administration of antimony and other depressants has been suggested and carried out with a view to "bleed the patient into his own veins." This procedure, though useful in some instances of recurrent hæmoptysis and others of a slow and continuous nature, is hardly suited to emergencies, but a somewhat similar effect without the prostration and more under control can be obtained by applying elastic bands to the proximal end of the limbs. A moderate constriction is sufficient to retain the blood in the veins without arresting the flow in the arteries, so as to trap the fluid and to prevent its return to the heart. In this way a degree of anæmia in the central part of the circulation is obtained without further blood-shed, favourable to cessation of hæmorrhage and coagulation at the bleeding point, while the surplus remains in the limbs against future needs.

Whilst dealing with hæmorrhage it may be useful to allude to that common form epistaxis, which used to be treated by the barbarous practice of plugging the anterior and posterior nares. Now, happily, we have a remedy in a spray of adrenalin solution, 1 in 1000, which rarely fails in immediately arresting the bleeding and nothing could be cleaner, more inoffensive, or easier of application. But in the very exceptional instances in which it may be necessary to apply pressure this can now be done by means of a suitable rubber bladder introduced and inflated through the nostril and known as a "condom." Before this instrument was invented, and even now in its absence, an effectual plug for the nose could be improvised out of a piece of raw bacon fat from two to three inches long and of sufficient bulk, cut into appropriate shape, so that it can be just squeezed into the nostril, where it should remain several hours. It forms an efficient plug, is always at hand, and is not uncomfortable, neither is it so difficult to apply nor liable to adhere in its place or to lead to soreness and septic changes as are tampons. In minor cases the popular ideas of applying cold to the nape of the neck or raising the arms above the head are physiologically correct, as both tend to diminish the calibre of the vessels and to reduce the local tension and blood flow, but the plan of lying flat on the back, though tending to lower the force and frequency of the heart beat, is chiefly operative in causing the escaping blood to disappear into the pharynx. Perhaps as simple and effective a method of arresting minor forms of epistaxis as any is merely "champing" the jaws, when the blood flow of the internal maxillary artery is diverted to the muscles of mastication and the smaller terminal vessels in the nose are starved and cease to bleed.

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SPIRAL FORMATIONS IN RELATION TO WALKING, SWIMMING, AND FLYING.

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THE universality of the spiral in nature is a subject alike for surprise and reflection. As regards beauty of outline, the spiral transcends all other forms and is a source of pleasure. The spiral occurs very frequently both in the inorganic and organic kingdoms and, as I hope to show in the present article, has its own special uses. It is seen on a grand scale in the spiral arrangements of nebulæ, in the whirlwind and whirlpool, in the waterspout and the sand-storm, in the cyclone, and other natural phenomena. As concerns living things it is fundamental and manifests itself in the most rudimentary plants and animals, in the cells and seeds of the higher plants, and in the spermatozoids of the more complex animals. It makes its appearance, so to speak, at the very threshold of life and can be traced through the whole vegetable and animal kingdoms up to man himself. It is seen in spiral stems, spiral tendrils, spiral leaves, spiral flowers, spiral fruits, &c., in plants, and in spiral bones and joints, spiral muscles, spiral horns, spiral teeth, spiral shells, &c., in animals. It not only abounds in every department of plant life but it also lends itself freely to the construction of large numbers of external and internal skeletons in animals. All the hard and soft parts of the higher animals are, with few exceptions, dominated by it. It is a thing not of accident but of design.

Apart from the beauty and grace which inhere in every variety of spiral I think I can trace in it a hidden and far-reaching purpose. Indeed, I can show that not only do spirals enter largely into the formation of plants and animals but also that the complicated movements of climbing plants and tendrils and of walking, swimming, and flying are directly traceable to their existence; nay, more, that the circulation of the blood in birds and mammals is in great measure due to the ventricles of the heart being composed of powerful combinations of spiral muscular fibres. As a matter of fact, the blood in birds and mammals is forced by the ventricles into the larger blood-vessels (especially the aorta) by spiral movements which cause it to gyrate within them much in the same way that a rifle bullet is made to gyrate within a rifle when the weapon is discharged. The ancient and grim phrase "wringing the heart's blood" has, curiously enough, its foundation in fact. The spiral ventricles of the heart in birds and mammals are typical of

many other structures. In the human species the stomach, bladder, uterus, &c., are all composed of spiral, figure-of 8 muscular fibres and, strange as it may appear, the food, the urine, and even the fœtus, are subjected to spiral pressure when being passed on and extruded. In parturition in the human female the offspring make a distinctly spiral exit, a result produced partly by the movements of the uterus and partly by the configuration of the pelvis. The heart is at once the most spiral and powerful muscle in the body, if the amount of work performed by it and its unceasing activity be taken into account. The ventricles of the heart are also by far the most complicated muscles known. Their arrangement forms a veritable Gordian knot in anatomy, the famous anatomists, Vesalius, Albinus, Haller, and De Blainville all confessing their inability to unravel it. The ventricles of the heart are deserving of very particular attention, both as regards their structure and function, from the fact that they throw a flood of light on muscular arrangements and movements as a whole.

All muscles, voluntary and involuntary, are fundamentally spiral in their nature. Sometimes only a curve or portion of a spiral can be distinguished, at other times entire systems of double reversing spirals can be made out. The involuntary muscular fibres of the ventricles of the heart in the bird and mammal afford beautiful examples of complicated double spirals, and one has only to study the spiral configuration of the bones (especially the long bones) as seen in the extremities of birds and mammals and the spiral configuration of the joints connected therewith to be convinced that the voluntary muscles must not only be spirally arranged but that they must also act spirally. The spiral action of the voluntary muscles is most observable where they act upon spiral joints, but it is also well seen where they act upon universal or ball-and-socket joints, such as the shoulder- and hip-joints. It is in virtue of the spiral action of the muscular masses connected with ball-and-socket and with spiral hinge and other joints that circumduction and partial rotation of the arms and legs are possible. It is a curious fact that the muscular masses which invest and actuate ball-and-socket joints have their fibres arranged very much as the muscular fibres of the ventricles of the heart in birds and mammals are arranged—that is, they run in vertical, oblique, and transverse spiral directions. The muscles of the pharynx, œsophagus, and tongue follow the same general plan. The voluntary and involuntary muscles, it will be seen, are arranged in spiral cycles, the only difference between the two kinds of muscles being that in certain of the hollow viscera, say the ventricles of the heart of the bird and mammal, the involuntary muscles are arranged round *spiral cavities*, whereas the voluntary muscles, say those occurring in the extremities of the bird and mammal, are arranged round *spiral bones and spiral and other joints*. The involuntary hollow muscles communicate, as stated, a spiral impulse to the substances contained within them; the voluntary solid muscles, on the other hand, cause the extremities and other parts of the body to make spiral movements and describe spiral trajectories.

Muscles, whether voluntary or involuntary, in every instance act harmoniously and to given ends. Their movements are never perfunctory or haphazard. There is no such thing as flexor muscles forcibly and violently dragging out extensors, pronators supinators, abductors adductors, and the converse. This would be a mere waste of power, as it would necessitate one muscle contending with another, while each muscle has the same object in view—namely, the moving of certain bones or parts. When the flexor muscles shorten or contract the extensor muscles elongate or relax. This they do by simultaneous centripetal and centrifugal movements. Not only do the voluntary muscles act together and in groups but they require to be trained to prevent antagonistic action. Walking, swimming, and flying have all to be learned and the training consists in teaching the several muscles and groups of muscles to act in concert at stated intervals. Antagonism in muscular action would be fatal to the performance of muscular work. As a matter of fact, all muscles are invested with a double vital power whereby they can shorten and elongate, or what is the same thing close and open, by alternate centripetal and centrifugal movements, the flexor muscles closing and shortening when the extensor muscles open and elongate, and *vice versâ*.

In no part of the body do curves and spirals play a more prominent part than in the spinal column, the pelvis, shoulders, and extremities. In man the spinal column consists of four exquisite curves, the convexities of the cervical and abdominal curves being directed forward and the convexities of the thoracic and pelvic curves being directed backward. This double system of curves diffuses shocks equally from above and below and presents a line of beauty not matched even by that of the famous limner, Hogarth. The pelvis consists of a series of most beautiful arches (some of them skew), and the bones composing the arches are twisted in various directions. Similar remarks apply to the scapulæ, the clavicles, and the ribs. The bones of the extremities, as already pointed out, are spiral in their nature, but they are also in the majority of cases slightly bent in the direction of their length, a circumstance which contributes greatly alike to their elasticity and to their strength. Additional strength and elasticity are obtained, in the case of the arm and thigh bones (humerus and femur), by the bones being provided with short, oblique necks where they articulate with the body, an arrangement calculated to neutralise impacts of all kinds from the hands, feet, and other parts of the extremities.

In virtue of the spiral arrangements which obtain in the muscles and in the bones and joints of the extremities the limbs of bipeds and quadrupeds in walking and running describe alternating, complemental, figure-of 8 curves arranged in different planes and which approximate but never interlock. A locking movement of the extremities would render locomotion impossible. It follows that men and animals can, by the aid of their extremities, which move in free spiral curves, perform long journeys without difficulty. As is well known, the bodies of vertebrate animals are bilaterally symmetrical. This is especially true of man who may be regarded as the paragon of living forms. In order to bring about this bilateral symmetry the body is composed of right- and left-handed spiral segments, the one slightly overlapping and dominating the other. This view is favoured by the fact that antelopes and other animals which grow spiral horns invariably produce a right-handed spiral on one side of the head and a left-handed spiral on the other or opposite side of the head. The overlapping, stronger, and more active segment or half of the body practically settles the question of right- and left-handedness, the individual being right handed when the right segment and left-handed when the left segment is in the ascendancy. The brain, as the controlling agent, is a leading factor in determining whether an individual is to be right- or left handed.

Without entering into the subject too minutely it is safe to assert that the one side of the body is almost invariably stronger than the other, and that this greater strength, however produced, inclines the individual to use that side and the extremities of that side the most. This is well seen in the lead taken by one or other extremity in walking. If the eyes be blindfolded it is not possible to walk in a perfectly straight line. It is found, moreover, next to impossible to walk in a perfectly straight line even when the eyes are open and fixed on a given object. Unconsciously, the heavier, stronger, and more active half of the body asserts itself and the individual swerves in curves to the right or left in spite of himself. The curved spiral movements of the limbs and the trend to the right or left in particular instances explain why natural footpaths in fields and waste places are almost invariably tortuous and winding. The spiral arrangements to which reference has been made culminate in the movements of walking, swimming, and flying. These important movements, on which the lives of the higher animals largely depend, are, as I showed in 1867 and subsequently,[1] distinctly spiral in their nature. When a man walks he twists his body at the shoulders and hips diagonally, the right arm and left leg advancing together to form one step, the left arm and right leg advancing together to form a second step. The right arm and left leg in walking make opposite spiral curves and these are crossed by similar curves made by the left arm and right leg, the result being a series of double, figure-of-8 curves. The same thing happens when a bird swims by the aid of its feet. In this case the right leg with the right webbed foot fully expanded is during the effective stroke thrust in a backward direction and makes a right-handed curve; the right foot, which during the non-effective stroke is closed and drawn towards the body,

[1] On the Various Modes of Flight in Relation to Aeronautics (Proceedings of the Royal Institution of Great Britain, 1867); on the Mechanical Appliances by which Flight is attained in the Animal Kingdom (Transactions of the Linnæan Society, vol. xxvi. 1867); on the Physiology of Wings (Transactions of the Royal Society of Edinburgh, vol. xxvi., 1870); on Animal Locomotion (Anglo-American Science series, 1873), &c.

making a left handed curve. The left leg and foot perform similar movements and as the right and left legs and feet act alternately, double or figure-of-8 curves are generated. Similar remarks are to be made of the movements of quadrupeds. These, however, are slightly more complicated. Thus, in the walk of the horse the body is alternately supported on diagonals formed by the right fore and left hind legs and the converse; on laterals formed by the right fore and right hind legs and the converse; and on tripods formed by the two fore legs and one hind leg and the converse. In one stride the body is successively supported (1) by the two hind legs and the left fore leg; (2) by the left fore and right hind legs; (3) by the two fore and right hind legs; (4) by the right fore and right hind legs; (5) by the right fore and the two hind legs; (6) by the right fore and left hind legs; (7) by the two fore and left hind legs; and (8) by the left fore and left hind legs.

The supports formed by the legs of the horse vary in the several paces, such as the trot, the gallop, the amble, &c. The outstanding feature in all the paces is the twisting movements of the body at the shoulders and hips, and the sinuous, double, figure-of-8 curves made by the legs and feet on leaving and reaching the ground. These double-curved movements are well seen in the swimming of the fish, especially the long-bodied fishes. In swimming the body of the fish is thrown into alternating, complemental, cephalic, and caudal curves. Generally the sinuous double-curve movements can be traced also in the pectoral fins of fishes, these fins being the homologues of the anterior extremities of quadrupeds and bipeds. They invariably occur in the tail, which is lashed from side to side by a sculling movement. The tail of the fish is made to vibrate laterally, and while so engaged it twists upon its root or axis in such a manner as to produce double curve, figure-of 8 movements. The pectoral and caudal fins of fishes are of a generally triangular shape and are beautifully graduated, tapering, elastic structures. They closely re-emble wings both in structure and function. They are all propelling organs. If the pectoral fin of the thresher shark (*Carcharias vulpes*) be examined it will be found that it is triangular-shaped, thick, and semi-rigid at the root and along the anterior margin and thin and elastic at the tip and along the posterior margin. This is the type of all wings, as an inspection of the wing of an insect, bird, or bat will show. Wings are slightly twisted upon themselves structurally and are screws functionally. The main difference between the pectoral fins of the shark and the wings of flying creatures consists in the greatly increased size of the latter. In only one case—namely, that of the flying fish—do the pectoral fins approach the wings in dimension. The flippers of the dolphin, whale, and sea-bear resemble the pectoral fins of the shark both in form and function. The fins and tails of fishes and the flippers of sea mammals simply propel. The wings of insects, birds, and bats propel, elevate, and sustain. Fins, wings, and flippers, however, act on a common principle, which finds its expression in the sinuous, double curve, figure-of-8 movements referred to in the walking of the quadruped and biped and in the swimming of the bird and fish. That wings act as explained can readily be verified by holding a bluebottle fly or a bee against a dark background in a strong light when the wings are vibrating rapidly. The blur or impression produced on the eye of the spectator by the swiftly-moving wing is twisted figure-of 8 fashion, a circumstance due to a change of plane in the wing and to the fact that the wing acts spirally in two directions as it hastens to and fro, the double curves forming one-half of the 8 being developed during the forward stroke and the double curves forming the other half of the 8 being developed during the back or return stroke. In free flight the figure-of-8 is opened out spirally, the wing in this case making a waved-trajectory in space. In the insect the wing acts more horizontally than in the bird and bat. In the bird and bat the spiral figure-of 8 movements made by the wings can be readily detected by a practised eye and careful observation. When the wings of the bird and bat are made to vibrate in captive or slow flight the tips of the wings make more or less vertical figure-of-8 trajectories. In free rapid flight the figures-of-8 made by the wings are opened out and spirally unravelled and form waved trajectories—as in insects. To this there is no exception, as I have very fully convinced myself alike by observation and experiment. In birds and bats the wings are more or less folded and shortened during the up-strokes and expanded and lengthened during the down-strokes. The wings of birds and bats, as I first pointed out in 1867, strike downwards and *forwards* during the down stroke and upwards and *forwards* during the up-stroke. This view, wholly opposed to prevailing beliefs, was much debated at the time, but has been strikingly and amply corroborated by instantaneous photographs of flying birds taken by Mr. E. Muybridge and others. In these photographs—those of the pigeon, e.g.—the tips of the wings at the *beginning* of the down-stroke are as far back as the extremity of the tail, whereas at the *end* of the down-stroke they are in advance of the beak of the bird the whole length of the body or more. The old idea was that the wings *pushed* the body of the flying creature forward; in reality, the wings always fly in advance of the body and *pull* it forward. The result is the same, but the *modus operandi* is wholly different.

In all natural wings and in all artificial wings properly constructed the figure-of-8 and waved movements are invariably developed in captive and free flight. The great interest taken in artificial flight of late years invests the subject of the present article with a new zest and this has been heightened by the recent publication (1903) of a small work by Mr. Theodore Andrea Cook, M.A., entitled "Spirals in Nature and Art: a Study of Spiral Formations based on the Manuscripts of Leonardo da Vinci, with special reference to the Architecture of the Open Staircase at Blois, in Touraine." Mr. Cook in the work in question has attributed, rightly or wrongly, to that celebrated artist, architect, and engineer a large number of the most important discoveries of modern times. I say rightly or wrongly, as Mr. Cook adduces no proof to show that Leonardo actually made the discoveries which he has assigned to him, proofs, it appears to me, being required in the case of a savant who died several centuries ago and whose writings are very little known. In the matter of flight the claims which Mr. Cook makes for Leonardo are wholly unwarranted—indeed, wholly opposed to facts. Thus at pages 153 and 154 of his book he says: "The downward stroke of a bird's wing which is supposed to be so new a revelation of the instantaneous camera was noted independently by Leonardo. He observed, too, that as the tips of a bird's wings in flight go up and down as well as onwards they make a spiral in the air which is adapted to the strength of wind resistance it has to encounter, and he made use of this observation in his theory of flying machines. His brain was able to infer what no human eye could really see, and when he noted that the spiral formation of a screw was suggested by the movement of a flying bird it was not till 400 years afterwards that the truth of the inference could be visibly demonstrated." Mr. Cook, in support of the claim which he sets up for Leonardo, appropriates (vide Fig 45 of his book) two of my original figures which he assigns to Leonardo without acknowledgment. In this connexion I have to state that Mr. Cook in a recent issue of *Nature* (July 30th. 1903) has frankly admitted that he inadvertently appropriated my figures. In his apology, however, he avers that my figures are of very little importance to his argument. He gives with the one hand and takes with the other. The statement quoted above is altogether inaccurate and is not justified, even indirectly, by any passage or drawing occurring in the manuscripts of Leonardo da Vinci which I have carefully examined. As a matter of fact, Mr. Cook in his great admiration of Leonardo unwittingly reads into Leonardo's short treatise and notes on natural and artificial flight the discoveries on these subjects of the last 36 years. He gives to the sixteenth century what unquestionably belongs to the nineteenth century. Leonardo's chief work on flight, bearing the title "Codice sul Volo degli Uccelli e Varie Altre Materie," written in 1505, consists of a short manuscript of 27 small quarto pages, with simple sketch illustrations interspersed in the text. In addition he makes occasional references to flight in his other manuscripts, which are also illustrated. In none of Leonardo's manuscripts, however, and in none of his figures is the slightest hint given of his having any knowledge of the spiral movements made by the wing in flight or of the spiral structure of the wing itself. Mr. Cook, as explained, also claims that Leonardo knew the direction of the stroke of the wing as revealed by recent researches and proved by modern instantaneous photography. As a matter of fact, Leonardo gives a wholly inaccurate account of the direction of the stroke of the wing. He states that the wing during the down-stroke strikes downwards and *backwards*, whereas in reality, and as demonstrated by me in 1867, it strikes downwards and *forwards*.

In speaking of artificial flight Leonardo says: "The wings have to row downwards and backwards to support the machine on high, so that it moves forward." In speaking of natural flight he remarks: "If in its descent the bird rows backwards with its wings the bird will move rapidly; this happens because the wings strike the air which successively runs behind the bird to fill the void whence it comes." There is nothing in Leonardo's writings to show that he knew either the anatomy or physiology of the wing in the modern sense. He certainly did not know that the wing is a screw structurally and functionally; that in captive flight it makes a figure-of-8 track; that in free flight the figure-of-8 is opened out to form first a spiral and then a waved-trajectory, and that it strikes downwards and *forwards* during the down-stroke, the wings pulling and not *pushing* the bird as Leonardo and all those who followed him believed.

St. Andrews.

AN UNUSUAL FORM OF FAMILY PARALYSIS.

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TWO brothers have recently been under my care in St. Bartholomew's Hospital who were affected as follows. The elder one had for many years suffered from weakness of the legs and within the last four months had developed weakness accompanied with muscular atrophy of one hand. The younger brother had been weak in the legs for ten months. A third brother, whom I saw once, appeared to have a similar though much slighter affection of the legs. The following notes are largely due to my house physician, Dr. A. H. Hogarth.

CASE 1.—A man, aged 23 years, tailor by trade, was admitted to Luke Ward on Oct. 28th, 1903, complaining of difficulty in walking and of loss of power in the right hand. Dragging of the legs in walking was first noticed 17 years ago—i.e., at the age of six years; for this he attended at the London Hospital. 14 years ago he attended at St. Bartholomew's Hospital and was given a pair of surgical boots. 11 years ago he attended for a short time at Guy's Hospital. At St. Thomas's Hospital, nine years ago, operations (probably of the nature of tenotomy) were performed on his feet. Six years ago he began to use a stick. Three years ago he noticed that the legs were wasting. Four months previously he had to give up work on account of weakness in the right hand and this weakness had been increasing since. Apart from these affections he had had no illness of any kind. He had been attending the orthopædic department under Mr. W. McAdam Eccles and the electrical department under Dr. H. Lewis Jones. He was a well-nourished though rather small-made man of typical Jewish aspect and appeared to be very intelligent. The internal viscera were normal. There was no disease of the spinal column. Speech was natural. The tongue was protruded straight; it was not wasted. He had no difficulty in swallowing. As regards the eyes nystagmus was present on fixing to either side, especially to the left, the movements being rather large, horizontal in direction, and not maintained for very long together. The pupils were normal; the fundus of the eyes was normal; there was no affection of vision.

The lower limbs were thinned, particularly in the lower part of the legs; but the wasting was uniform, not picking out any special muscles. (This refers to the general appearance; it should be added that Mr. McAdam Eccles, who kindly saw these patients for me, thought that there was loss of power and atrophy of the short muscles of the feet, particularly of the abductor hallucis and the flexor brevis digitorum.) There was extreme flatfoot on both sides. The bones of the ankles looked big and prominent and there was some stiffness at the ankles but apparently no actual disease of the joints themselves. Marked hallux varus was present on both sides. There was no definite loss of any movement, except it were for a slight weakness in plantar flexion of the foot; neither were the lower limbs rigid. As regards gait the patient required some support. He walked with his legs held rather stiffly and his knees a little bent. There was very little movement at the ankles; his toes seemed not to leave the ground. In addition his feet sometimes became crossed and he then staggered to one side and nearly fell down. The knee jerks were much increased on both sides. Ankle clonus was present on the right side always, sometimes on both. The plantar reflexes showed a well-marked extensor response on both sides. Electrical reactions (examined by Dr. Lewis Jones) were normal in the legs, the thighs, and the glutei; they were not obtained in the interossei pedis.

As regarded the upper limbs the muscles of the shoulders, the upper arms, and the forearms were natural. In the right hand there was marked wasting of the thenar and hypothenar eminences and of the interossei. Of the thumb movements adduction and opposition were lost and flexion was done by the long flexor. It was this loss of power in the thumb which was mainly complained of. The grip of this hand was weak. In the left hand there was perhaps some wasting, but not nearly so much as in the right, and the patient himself had no complaint to make of this hand. The tendon reactions were well marked in both upper limbs, the right more than the left. In response to electrical stimulation all muscles of the upper limbs acted normally excepting in the right hand, where there was total loss of reaction in all the thenar muscles and in the first dorsal interosseous muscle. The other dorsal interossei and the hypothenar muscles acted normally and there was no reaction of degeneration. There was no sphincter trouble and sensory functions were quite normal.

The patient had electrical baths daily. He stayed in the hospital a fortnight, during which time no change in his symptoms occurred except that he crossed his feet less when walking. Mr. McAdam Eccles concurred in the opinion that the peculiarity of gait could not be wholly ascribed to the condition of flatfoot. To summarise, this patient suffered from deformities of the feet and toes; from a paralytic affection of the lower limbs, partly of the spastic type (as shown by the increased tendon reactions and the extensor plantar reflexes), but accompanied by some general thinning of the muscles; from a much more recent muscular atrophy in one hand; and from some nystagmus.

CASE 2.—A brother of the above patient, aged three and three quarter years was admitted to Luke Ward on Nov. 13th, 1903, for difficulty in walking. He was a healthy-looking and intelligent child. No disease of the internal viscera was discoverable. The face, tongue, and eyes were normal. There was no nystagmus. Speech was natural. The spinal column showed a rounded prominence (antero-posterior curvature) in the lumbar region. Mr. McAdam Eccles did not think there was evidence of caries; probably, therefore, this curvature had little to do with the weakness of the legs. As regards the lower limbs there was no flatfoot; some slight stiffness at the ankle joints was present; there was no definite loss of power of movement. The knee-jerks were increased on both sides; no ankle clonus was obtained. The plantar reflexes were of the extensor type on both sides. The gait was peculiar. The patient could walk alone but he kept his feet apart; he balanced with his arms as he walked and his feet seemed to stick to the ground. He did not cross his feet like his brother. The upper limbs were natural, except that Dr. Lewis Jones reported some weakness in the electrical reactions of the extensors of the wrists and fingers on both sides. All the other muscles, both of upper and lower limbs, reacted normally. The sensory functions were normal. There was no sphincter trouble. According to his mother the child had been born strong and healthy, though instruments were used at his birth. He began to walk when 11 months old. Ten months previously—i.e., when he was nearly three years old—she first noticed a weakness of the legs which had become worse gradually.

This patient, therefore, like his elder brother, had a difficulty of walking, with indications of a spastic paralysis (increased knee jerks, extensor plantar reflexes), but had no deformities of the feet, no muscular atrophy in the upper limbs, unless the slight electrical abnormality noticed by Dr. Lewis Jones be taken as the herald of such atrophy, and no nystagmus.

CASE 3.—A third brother of this family, aged seven years, was thought by his mother to be weak on his legs and was brought to see me in the ward on Nov. 27th, 1903. He also was a healthy looking child and as he walked with his boots on there was really nothing noticeable in his gait except

perhaps a slight waddle and a slight unsteadiness when he turned, but in walking barefoot he seemed to turn his toes up and to bring his feet down rather heavily. There was no definite deformity of the feet or spinal curvature. The knee-jerks were well marked; ankle-jerks were obtained; no ankle clonus was present. The plantar reflexes were of extensor type. There was no affection of the upper limbs or nystagmus. It seemed probable that this boy suffered in a very slight degree from the same affection as his brothers.

The eldest of the family, a woman, aged 24 years, I saw at the same time. She had a very considerable spinal curvature in the dorsal region, mainly lateral, with convexity to the right, but perhaps some kyphosis as well. There was no deformity of the feet. The knee jerks were rather marked; ankle clonus was not present. The plantar reflexes, unfortunately, could not be obtained owing to the coldness of her feet. The hands were normal; the wrist-jerks were rather marked. Nystagmus was not present. She walked quite naturally, and indeed beyond the spinal curvature appeared to have nothing the matter with her. The whole family, according to her statements, consists of the following members: Father and mother, both alive and well; (1) daughter, aged 24 years (has spinal curvature); (2) son, aged 23 years (Case 1); (3) daughter, aged 18 years (said to be anæmic); (4) son, aged 17 years (said to be healthy); (5) son, aged 15 years (said to be healthy); (6) son, aged 13 years (said to be healthy); (7) daughter, aged 11 years (said to be healthy); (8) son (Case 3); (9) daughter, aged five or six years (said to be healthy); and (10) son, aged three and three-quarter years (Case 2).

I make the assumption that all three brothers had the same disease, differing only in degree. It is, however, rather difficult to fit the disease into any of the usual types of family paralysis. Friedreich's disease may be excluded. So may peroneal muscular atrophy (to which there was a certain *primâ facie* resemblance), by the presence of increased knee-jerks, of ankle clonus, and of extensor plantar reflexes. Amyotrophic lateral sclerosis, in which there occurs the combination of spastic paraplegia and muscular atrophy of the upper limbs, does not run in families and has a more rapid course than the disease under consideration. Syringomyelia, which sometimes occurs in more than one member of a family and which exhibits the same combination of spastic paraplegia with muscular atrophy, is characterised by sensory paralyses which here were not present. The condition of the legs might be explained by a cerebral diplegia, but the gradual development of the disease, the complete absence of mental affection, and, most of all, the muscular atrophy in the hand must weigh against this diagnosis. Dr. S. J. Gee, in St. Bartholomew's Hospital Reports for 1889, published three cases of "hereditary infantile spastic paraplegia" in a man and two of his children. The man had also muscular atrophy of the hands and one child had indications of commencing atrophy. These cases therefore strongly resembled my own. They differed, so far as my personal recollection goes (as medical registrar to the hospital I had the opportunity of seeing them), in that the spasticity of the lower limbs and the cross-legged progression in particular were much more marked. There was, too, much less paralysis of the atrophied hand muscles than in my Case 1, for whereas my patient could not do his work as a tailor, Dr. Gee's patient, also a tailor, was still the first hand in the shop.

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A CASE OF FACIAL PARALYSIS ASSOCIATED WITH HERPES ZOSTER.

BY E. HEWAT FRASER, M.D., F.R.C.S. EDIN.

THE patient, a robust, middle-aged man, was seen on Oct. 20th, 1903 complaining of neuralgic pains in the face and head. On the 25th a widespread herpetic eruption appeared over the right side of the neck, spreading up on to the scalp and over the ear on to the lower part of the face; on the neck the rash extended down to the shoulder and over the clavicle on to the upper part of the chest. On Nov. 8th he was found to have developed typical Bell's paralysis of the affected side. The mouth was drawn to the left, the wrinkles had disappeared, and the actions of whistling and winking could not be performed; he also complained of the escape of food from between the teeth into the cheek of the paralysed side. No vesicles appeared on the upper part of the face but the skin was swollen and red and there was some conjunctivitis of the right eye. On mapping out the area of distribution of the herpes it was found to correspond to practically the whole region supplied by the superficial branches of the cervical plexus (second, third, and fourth cervical nerves), the ear and scalp in the area of supply of the great auricular and cervical nerves, the front of the neck in the region of the transverse cervical, and the lower neck, shoulder, and chest over the distribution of the suprasternal, supra-acromial, and supraclavicular branches being covered with herpetic vesicles. On the face the vesicles followed the distribution of the cutaneous branches of the inferior maxillary division of the fifth nerve. In regard to this it is of interest to note that the patient indicated with great accuracy the position of the mental foramen as a painful spot in describing his neuralgic pain. As regards the motor palsy this appeared to be restricted to the purely facial part of the seventh nerve supply. The occipital belly of the fronto-occipitalis was not paralysed. It was difficult to make out the condition of the platysma or of the retrahens and attollens aurem, but the facial muscles of expression were, as a whole, paralysed. No palsy of any of the muscles supplied by the fifth nerve could be made out. The neck muscles supplied by the cervical nerves appeared quite unaffected and the infrahyoid group supplied by the ansa hypoglossi, and so indirectly from the cervical nerves, was also uninjured. No drooping of the soft palate or uvula, such as has been described in cases of facial paralysis following herpes, was observed. On testing the special senses hearing was found to be quite unaffected, high- and low-pitched notes being quite readily appreciated on both sides. Taste was found to be decidedly dull on the affected side of the tongue. Tactile sense was markedly impaired all over the right side of the face and the tongue; compass points gave a single impression at a distance of six millimetres near the tip of the tongue on the right side but were recognised as separate at two millimetres on a corresponding point on the left. On the skin of the right cheek the points felt as one until a separation of one centimetre was reached. The temperature sense was unaffected. On Nov. 5th the patient had greatly improved and had almost regained control of the facial muscles, so that it seems likely that here, as in the majority of reported cases, complete recovery will ensue.

The association of paralysis of various muscles with herpetic eruptions is not uncommon. Many cases of facial palsy after herpes are on record, as is also paralysis of limb muscles—e.g., deltoid—after localised herpetic attacks, while Achard and Castaigne[1] report a case of permanent paralysis of the left pupil following herpes of the ophthalmic division of the fifth nerve. A curious point in the present case is the complete escape of the muscles supplied by the fifth and cervical nerves in contrast to the complete paralysis of the facial group. The absence of damage to the stapedius and to the muscles supplied early in the extracranial course of the seventh nerve (occipitalis, &c.) seems to show that the injury to this trunk was entirely peripheral in position. This may perhaps be explained by the spread of a neuritis along the numerous communicating branches from the fifth and cervical nerves to the seventh on the face. The tenderness at certain points of emergence of nerves noted above seems to indicate the presence of some such inflamed condition of the trunks. In a somewhat similar case reported by Dr. A. S. Barnes[2] taste was lost on the affected side and hearing as regards high-pitched sounds was also impaired. Dr. Barnes therefore localised the injury to the facial nerve in the geniculate ganglion, thus explaining the paralysis of both the nerve to the stapedius and the chorda tympani. In the case now reported there was loss of taste but no change in the audibility of high notes, so then it seems probable that here the chorda became affected during its associated course with the lingual nerve. In another case recorded by Mr. H. A. Spencer[3] hearing and taste both escaped although there was complete facial paralysis, but the patient was a typical rheumatic subject and Mr. Spencer explained the condition as a simultaneous

[1] Gazette Hebdomadaire, Paris, December, 1897.
[2] THE LANCET, Nov. 1st, 1902, p. 1197.
[3] THE LANCET, June 9th, 1894, p. 1447.

rheumatic neuritis of the facial and cervical nerves. In the present case there were neither symptoms nor history of any rheumatic tendency. The work of Campbell and Head [4] has definitely shown the cause of herpes zoster to lie in some damage to the Gasserian and posterior root ganglia, as against the vascular theory advanced by Abadie; [5] so that in the present case one is forced to the conclusion that some lesion in the Gasserian and the second, third, and fourth cervical spinal ganglia set up a neuritis in the corresponding nerves which spread by direct continuity to the terminal distribution of the seventh nerve and so produced a temporary facial paralysis.

Hull.

AN EFFECTUAL MEANS OF DEALING WITH THE CONDITIONS OF CHRONIC OBSTRUCTION OF THE LARGE BOWEL

RESULTING FROM THE ADHESIONS WHICH DEVELOP IN CONSEQUENCE OF CHRONIC CONSTIPATION.

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IN a lecture entitled "Chronic Obstruction of the Cæcum and Ascending Colon" published in THE LANCET of Jan. 17th, 1903, p. 153, I called attention to the mechanical obstruction of the large bowel which arises in consequence of its being overloaded with contents. My attention was directed to this diminution of the lumen, particularly of the hepatic flexure, by the close resemblance of the symptoms which are presented in these cases to those of renal troubles whether of calculus or of excessive mobility. Before I recognised this condition I frequently cut down upon the right kidney expecting to find a stone and after carefully separating it and its pelvis from surrounding structures and exploring the organ have been much disappointed at finding nothing. To my surprise, however, the patient frequently lost all pain and discomfort. These experiences have occurred to many and are well recognised. As soon as I became familiar with this state of cæcal obstruction I have called attention to I saw that the cases I had operated on as renal were really of this character and that the extensive separation of the colon from the kidney in the process of exploring that organ thoroughly was often sufficient to remove the obstruction, if not for ever, at all events for a time. As the lecture may possibly have escaped the observation of the readers of this paper I will recapitulate briefly the details to which I refer.

When fæcal matter is allowed to accumulate in the intestinal tract there are two portions which are particularly likely to suffer and to become more or less inflamed from the irritation which its presence in excessive bulk or in excessive hardness produces. They are the cæcum and ascending colon and the sigmoid flexure. The splenic flexure is less commonly affected. The segment which is most affected is formed by the cæcum and the ascending colon. This part of the large bowel is the natural cesspool of the tract, material being collected in it, and in the recumbent position the overflow passes along the transverse colon usually without any difficulty. When the trunk is in a position other than the supine there is required for the expulsion of the contents of the cesspool the expenditure of an amount of energy often in excess of that which the organism can afford, and as there is no obstruction to the passage of liquid from the ileum into the cæcum the distension of the cesspool and the weight of its contents become considerable. In consequence of this its walls become inflamed to a certain extent and peritoneal adhesions form between it and the adjacent wall of the abdomen externally. These adhesions oppose the downward and inward displacement of the loaded cæcum. As time goes on these adhesions form above an omentum of considerable strength which, having an attachment in the right flank above and external to the kidney, is distributed over the anterior and outer surface of the hepatic flexure and ascending colon and affords an excellent means of supporting and slinging this overloaded bowel in the erect position. The arrangement is such, however, that while the erect posture is maintained there is an abrupt kink of the bowel in the situation of the hepatic flexure. The adhesions which bind down the cæcum externally also fix the proximal half of the appendix. In consequence of the fixation of this portion of the appendix distension of the cesspool is associated of necessity with an abrupt kink of the appendix at about its centre and with a coincident distension of the distal half of this structure which may produce all the very varying symptoms of what is called "appendicitis." The emptying of the distended cæcum in the ordinary course of events relaxes the traction on the adhesions and may so permit of the escape of the dammed up contents of the distal portion of the appendix. We are all very familiar clinically with the fact that symptoms of appendical irritation may subside at once after the intestines have been thoroughly evacuated by a purge.

The formation of adhesions between the cæcum, the ascending colon, and the abdominal wall serves not only to support the overloaded cæcum but also to prevent its displacement upwards and inwards and the formation of a so-called volvulus. Though this condition is described as a volvulus and is put on a par with volvulus of the sigmoid flexure the conditions are quite different. In the case of the cæcum and the ascending colon what is called a volvulus is merely the obstruction of the large bowel by the constriction of the hepatic flexure by the adhesions and omentum I have described. The cesspool, over-distended with its contents, moves in the direction of least resistance along a radius formed by the new mesentery which is downwards, inwards, upwards, and forwards. When seen in this position the distension of the cæcum is regarded as being brought about by the twist or volvulus, whereas the position of the overfull bowel in the situation of the volvulus is the natural and necessary sequence of obstruction of the flexure and an insufficient anchoring of the cæcum to the abdominal wall externally. The obstruction of the hepatic flexure by adhesions and by the acquired mesentery which results from their presence is so remarkable and characteristic that one wonders how it escaped one's observation before.

I soon became alive to the fact that the symptoms which arise in consequence of the obstruction of the bowel at the hepatic flexure were usually attributed to inflammation of the appendix which is naturally often associated with it. The presence of adhesions about the proximal half of the appendix brought support to this view. Consequently many cases came under my observation in which symptoms persevered unchanged after the removal of the appendix, much to the disappointment of the patient and of the surgeon who operated. On exploring them I found that precisely the same conditions of mechanical obstruction by band and adhesion existed in them all and that the symptoms were only relieved by the division of these bands and by insuring the subsequent efficient action of the bowel by purges, by massage, or by exercise

In spite, however, of the thorough division of bands, adhesions, and the complete liberation of the cæcum and ascending colon from the constricting influence exerted by them I came across a certain percentage of cases in which the operation produced only a temporary cessation of the symptoms of obstruction, the old trouble reappearing very soon after. This was the case especially in women who were physically feeble, who suffered from respiratory incapacity, and whose functions generally were performed in a correspondingly unsatisfactory manner. An examination of their intestines at the time of the operation showed them to be flaccid and plastic, retaining for an appreciable time the form and position in which they were placed by the fingers. At first I attempted to avoid the re-formation of adhesions by the administration of powerful purges before or immediately after the operation, placing the patient on the left side, and by other methods I could think of. Yet in a certain and by no means a small proportion of cases these efforts were unavailing. Being of opinion that the harm to the individual, both as regards pain and the formation of ptomaines, &c., consequent on the tedious passage of fæces through the large bowel, was greater than any advantage gained by absorption in that tract I determined to exclude the greater part of the large bowel from taking any share in the scheme of digestion. I knew that

[4] Brain, 1900 Part II.
[5] Annales de Dermatologie et de Syphilographie, 1899, p. 397.

the ileum had been connected with the sigmoid flexure or with the upper part of the rectum to deal with various troubles arising in special and rare cases, such as cancer, obstinate atony of the colon, intussusception, fistulæ, and the like, and that the result had been excellent so far as the nutrition of the patient was concerned. In these circumstances I determined to employ this method as a routine treatment in the definite group of cases of obstruction of the intestine produced by adhesions and by an acquired omentum in which the complete division of these constricting media will not afford relief, the recurrence or continuance of symptoms being produced by their re-formation. I make a very free lateral anastomosis between the lower limit of the ileum and the upper part of the rectum, or the sigmoid flexure if the rectum is too bound by fixation of the sigmoid flexure to allow of its being readily handled. For this purpose an efficient anastomosis can only be made by sacrificing a portion of the circumferences of both ileum and large bowel sufficient to insure that the resulting lumen at the junction shall not exceed the original size of the large bowel. The result of such operative treatment has been very satisfactory, the patient being freed from pain and tenderness, losing the dirty colour and inactivity consequent on the absorption of ptomaines, improving in weight, and obtaining regular daily evacuations by means of mild purgatives. The only objection to the lateral anastomosis is that the presence of any very large quantity of solid faecal matter in the vicinity of the opening in the large bowel may possibly cause faeces to pass on into the cæcum. For this reason I now divide the ileum, closing its distal aperture and making its proximal section open into the lower end of the large bowel, so rendering it impossible for any material to enter the cæcum.

Cavendish-square, W.

ON THE ACTION OF VENOMS OF DIFFERENT SPECIES OF POISONOUS SNAKES ON THE NERVOUS SYSTEM.

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Preliminary Account: Cobra Venom.

IT is admitted by all workers, both of earlier date and those of more recent times, that snake venoms in general do seriously affect the nervous system. There has been, however, considerable dispute as to the manner in which the action is brought about and as to the exact part which this action plays in causing the symptoms and the fatal result in cases of snake venom intoxication. Thus, while nearly every writer who has specially studied the physiological action of cobra venom considers that that poison owes its lethal properties principally, if not entirely, to a direct action on the nervous system, Cunningham[1] contends that its primary action is on the blood and that the nervous symptoms which are observed in cobra venom intoxication are wholly dependent on the action of the poison on the blood. Again, this same observer,[2] as a result of his experiments with the venom of daboia Russellii, puts forward the opinion that when this poison causes rapid death it does so entirely by a direct action on the central nervous system. He looks upon its primary action as being that of a strong nerve irritant. It is not our intention in this preliminary account to enter into the discussion of this latter problem. One of us[3] has already put forward facts which proved the inaccuracy of Cunningham's hypothesis and which showed beyond a doubt that all rapid deaths the result of the injection of daboia venom were due to a more or less extensive intravascular thrombosis. The observations, in short, recorded in that paper and in another communication[4] of later date showed that daboia venom had a marked action on the blood plasma and on the red blood cells, but they did not show that it had no action on the nervous system. To this point, however, we shall return in another communication. From these few considerations alone, and they might be greatly multiplied, it would appear that renewed research is necessary with a view of trying to determine definitely the action of the venoms of different species of snakes on the central and peripheral nervous systems. Up to the present time this problem has been approached by all workers, with few exceptions, from one standpoint only—viz., the standpoint of the observation of the symptoms which result from injections of the various venoms and the observation of gross pathological appearances in fatal cases. Such a method of research as a means of determining the exact physiological action of a poison on the nervous system is surrounded with difficulties. These difficulties have been well stated by Martin[5] of Melbourne as follows: "The determination of the exact physiological action of a poison on the nervous system of the higher animals is always difficult. The difficulties are enormously increased when the poison, as is the case with most snake venoms, profoundly affects the blood and the whole circulatory apparatus also. In such a case it is not easy to distinguish effects which are due to the primary action of the poison on nervous tissue from those which are secondary to changes produced on the circulation and blood." It was therefore necessary to approach this question from another direction.

One of the exceptions to which we have referred above consists in an observation made by Dr. B. Kilvington,[6] working in Professor Martin's laboratory at Melbourne—viz., that the venom of the Australian tiger snake produces marked chromatolysis of the Nissl granules of the cells in at least one portion of the nervous system if the animal survives the injection of the poison for over three hours. Only one part of the nervous system, however, was selected for examination by this worker—viz., the cervical enlargement of the cord. The method which we have adopted was to combine the observation of the symptoms during life with histological examinations of portions of tissue taken from all parts of the central nervous system and from the peripheral nerves of animals, principally monkeys, which had received injections of the venom of a certain species of snake and which had died at varying intervals after these injections. It was thought that by following this method of investigation a definite opinion could be arrived at as to whether there was a direct action of the poison on the nervous system and also as to whether in those cases in which evidence of a direct action was present any relationship could be established between the symptoms observed and the histological appearances seen in the central nervous system and in the peripheral nerves. In this way we are investigating the venoms of several of the most deadly of the Indian snakes, among these being naia tripudians (cobra), daboia Russellii (chain viper), bungarus fasciatus (banded krait), and echis carinata (phoorsa). In the course of this investigation many interesting and important points have turned up which may throw light on other neuro-pathological conditions and which make it necessary that further research should be made along the lines we have indicated.

In this preliminary account we propose to deal with only one variety of snake venom and to leave over for future communications the observations made with the other poisons. Moreover, after further investigation we shall be in a better position to sift completely the data we have obtained and to show their bearing on the action of neuro-trophic poisons in general. The material which was used in all the experiments was pure, dry, and fresh poison. This was collected under the personal supervision of one of us during a period of several months from a number of healthy living snakes. The poison was obtained either by squeezing the glands or by allowing the snakes to bite through a sheet of waterproof cloth tightly stretched over the mouth of a stout wineglass. When the poison had been thoroughly desiccated over lime it was added to the general stock which was preserved in an air-tight tube kept from the light. Before the venom was weighed it was reduced to an impalpable powder and again dried over lime.

[1] Scientific Memoirs by Medical Officers of the Army in India: 1895, Part IX., and 1898, Part XI.

[2] Loc. cit.

[3] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New series, 1903, No. 3.

[4] Ibid., No. 4.

[5] Clifford Allbutt's System of Medicine, vol. ii., p. 809.

[6] Journal of Physiology, vol. xxviii., No. 6, Dec. 15th, 1902.

The physiological action of cobra venom and the symptoms of the intoxication produced by it have been studied by many observers, especially in India. Nearly all these workers—Fayrer, Brunton, the members of the Indian commission, Wall, Aron, and Calmette—hold that cobra venom is a primary neurotic poison, acting directly upon the nervous, and especially the central nervous, system. This opinion, however, has only been arrived at by the observation of the symptoms which follow an injection of this venom. These symptoms certainly point, as we shall see, to an action of the poison on the nervous system. While this is the general opinion Cunningham, as we have mentioned above, has put forward the hypothesis that the primary action of cobra venom is an action on the blood and that the nervous symptoms, which have been observed and described by all alike, are dependent on, and can be interpreted by, the effects which the poison has on the blood. He holds that there is no satisfactory evidence that cobra venom has a primary action on the nervous system and he asks for more direct proof of this hypothesis than has hitherto been advanced. We hope in this communication to furnish sufficient direct proof of the effect of the action of this venom on the nervous system. As the symptoms of cobra-venom intoxication both in man and in animals are well known, having been described accurately by various Indian observers, it is unnecessary for us to enter into these symptoms in any detail. The following, therefore, is only a short summary taken from the data of the observations of one of us who has had the opportunity of studying the symptoms in two actual cases of cobra bite in man and in several hundred experiments in animals, including monkeys, horses, donkeys, dogs, &c.

When a large quantity of cobra venom is injected directly into the blood stream of an animal death takes place within three or four minutes after the injection. As a rule muscular twitchings and general convulsions are the only symptoms which are observed to precede death in these cases. On post mortem examination the blood is found to be liquid throughout; there is no trace of intravascular clotting to be found anywhere. If the quantity of poison injected intravenously approaches the minimum lethal dose the symptoms observed are the same as when the injection is made subcutaneously, the only difference being that they are of more rapid onset and terminate more quickly in death than in the latter case.

The first constitutional symptom which is observed to follow a subcutaneous injection of cobra venom is a state of lethargy and drowsiness. The head is seen to fall forward, almost immediately to be recovered with a jerk. The eyes are kept half shut but are opened suddenly on any stimulation. It is to be noted that there is no preliminary stage of excitement. Then paresis of the extremities becomes apparent and this is more marked at first in the hind limbs than in the fore-limbs; the animal has difficulty in moving and if a monkey it is seen to catch the bars of its cage to prevent itself from falling down. In man paralysis of the tongue and muscles of the throat soon makes itself evident; there is loss of the power of speech and the saliva which is profusely secreted trickles down the lip. Nausea, vomiting, and retching are common symptoms in man and in dogs. The paralysis rapidly advances, becoming more general and more marked. The animal soon lies down unable to move. The breathing still continues, although it may be slow and with much inspiratory effort. Just as the respiration ceases general convulsions may set in and close the scene. This symptom, however, is not observed in all cases. If the chest be opened immediately after the respiration has ceased the heart is seen to be still beating regularly and pulsation may go on for from 20 minutes to half an hour after respiration has stopped. On post-mortem examination no gross lesions of any kind are to be found. In those cases in which death has been at all delayed or in which a large quantity of venom has been injected directly into the blood stream the coagulability of the blood is found to be diminished. No other pathological condition is apparent. We have mentioned above that Cunningham considers that the symptoms which we have just narrated are dependent for their cause on the action of the poison on the blood. Now the action of cobra venom on the blood cells and on the blood plasma has been fully investigated by one of us.[7]

[7] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. 1903. No. 4.

The conclusions arrived at from this investigation were: (1) that cobra venom has a marked hæmolytic action but that the effects of this action *in vitro* were of little or no importance in the production of the constitutional symptoms; and (2) that cobra venom causes a certain but by no means well-marked diminution of the blood coagulability and that no symptoms as a rule result from this deficiency of blood coagulability. It is evident, therefore, that Cunningham's hypothesis is by no means an adequate explanation as a cause of the symptoms and of the fatal result in these cases and that we have still to search for other pathological lesions which might account for them. With this end in view we have examined the nervous systems of the following animals which died after having received injections of cobra venom:—

—	Weight in grammes.	Dose per kilogramme.	Time before death.
		Milligrammes.	Hrs. Mins.
Monkey No. 1	1830	0·25, subcutaneously.	6 0
,, ,, 2	3110	0·5, ,,	2 45
,, ,, 3	2770	0·5, ,,	2 30
,, ,, 4	2200	3·0, ,,	1 10
,, ,, 5	2050	10·0, intravenously.	0 3½
,, ,, 6	1900	10·0, ,,	0 2½
Rat ,, 1	—	0·25, subcutaneously. (+antivenomous serum)	45 0
,, ,, 2	—	0·05, subcutaneously.	20 0
,, ,, 3	—	0·25, ,,	3 0

The methods which were adopted for the histological examination of the nervous systems of these animals were as follows. Shortly after death portions of the cerebral cortex and cerebellum, the medulla, the pons, and pieces from different levels of the cord, as well as portions of the median, posterior tibial, and vagus nerves, were removed. Some of these pieces were fixed either in saturated solution of perchloride of mercury or in formol (10 per cent.), and then mounted in paraffin.[8] Portions of the same tissues from four normal control monkeys were treated in a similar manner. This portion of the work was done by one of us in India. The paraffin blocks were sent home and sections were then cut, examined, and described by the collaborator. The staining of the tissues was according to Nissl's method either by thionine or toluidin blue. Some sections were also stained with hæmatoxylin and eosine. The following is a description of the changes observed in the nervous system in each case.

Monkey No. 1, weight 1830 grammes, died in six hours after subcutaneous injection of 0·25 milligramme per kilogramme of cobra venom. Throughout the cord the appearances are somewhat striking. In the cervical enlargement, at the periphery of each anterior horn—i.e., in the antero- and postero-lateral groups—some ten to 15 cells are to be seen with well-stained and fairly well-defined Nissl granules. These granules, however, are not quite normal, for though not definitely fragmented they look as if little pieces had been clipped off their edges and under a high power it is quite apparent that their outlines are blurred and ill-defined as if some solvent had been acting on them. The rest of the cells in the anterior horn are degenerated and without any granules whatever. They are not typical "ghost cells," their nucleus and reticulum being too deeply stained for that; they look, rather, like a normal cell minus its chromatic granules. No cell is to be seen with the dust-like granulation so characteristic of a more chronic chromatolysis. In the lumbo-sacral region the same appearances are met with as in the cervical enlargement, though the number of these almost normal cells is less and a fair proportion of "ghost cells" is present along with the deeper stained cells with no granules. In almost all the cells the nucleus is central and the nucleolus distinct.

In the pons and the medulla the changes are much the same as in the cord, though not so marked. The twelfth, tenth (motor), and seventh nuclei all contain some of the almost normal cells, but also a considerable proportion of

[8] Other pieces of the same tissues were hardened in Müller's fluid and then passed through Marchi's fluid; these were also mounted in paraffin. But owing to some blackening of fibres in the control tissues it was decided that the osmic acid staining should be done over again. A note of this will be given in a later communication.

cells with the Nissl bodies much broken up. The cells of the seventh nucleus are less affected than those of the other two nuclei. In the cortex the vast majority of the pyramidal cells show an acute chromatolysis. As in the cord, there are some cells well stained and with their granules but little altered; but these are few and far between, not more than three or four to each section. In the cerebellum not one normal Purkinje cell is to be seen, most being deeply and diffusely stained, with a few dust-like granules in their plasma. The vessels throughout the cord, pons, medulla, and cortex are considerably dilated and in the cord some small hæmorrhages into the grey matter are to be seen. There is possibly a slight increase in the connective-tissue cells. These seem to be attracted by the ganglion cells, for one frequently sees such a cell with three or four connective-tissue cells around it and in close apposition to it. In the peripheral nerves there seems to be a slight increase of the internodal nuclei, but this is not by any means well marked.

Monkey No. 2, weight 3110 grammes. This animal received subcutaneously 0·4 milligramme per kilogramme of venom which had been kept in solution for some days. After the injection there were marked symptoms of poisoning but the animal recovered. Three days afterwards a second injection of 0·5 milligramme of poison freshly dissolved was given and death supervened in two and three quarter hours. The appearances in the cord seem somewhat different at different levels, some sections being practically normal, while others show quite a proportion of altered cells. Taken as a whole, there seems little doubt of the presence of degenerative changes, but they are not so well marked as in Monkey 1. As in that animal, there are cells with their granules slightly fragmented and others with almost no granules at all. The changes are most marked in the cells lying towards the central canal. The pons and medulla are almost normal. In the cerebral and cerebellar centres the cells are almost entirely devoid of granulation and the degenerative changes are just about as well marked as in Monkey 1. There is very slight increase, if any, in the nuclei of the peripheral nerves.

Monkey No. 3, weight 2770 grammes, died in two and a half hours after subcutaneous injection of 0·5 milligramme per kilogramme of cobra venom. In the cord the vast majority of the lateral cells seem practically normal, though they are, perhaps, rather more diffusely stained than they should be and their granules are possibly a little bit fragmented. Passing inwards there are cells found with more definite fragmentation and some have little granulation at all. The pons and medulla are normal. The cells of the cerebral cortex also are but little altered and may be considered as almost normal. The nerves show no abnormality.

Monkey No. 4, weight 2200 grammes, died in one hour and ten minutes after subcutaneous injection of 3·0 milligrammes per kil gramme of cobra venom. In the cord the vast majority of the cells seem quite normal, there being but a small proportion with their granules dissolved out. This may, however, be a commencing degeneration but if so it is not unequivocal. The cells of the pons, medulla, and cortex are almost normal. In the cerebellum the Purkinje cells are too diffusely stained and seem deficient in granules. The nerves seem little altered.

Monkey No. 5, weight 2050 grammes, died in three and a half minutes after intravenous injection of 10 milligrammes per kilogramme of cobra venom. The appearances throughout the nervous system may be considered normal.

Monkey No. 6, weight 1900 grammes, died in two and a half minutes after intravenous injection of 10 milligrammes per kilogramme of cobra venom. The appearances are as in Monkey No. 5.

Rat No. 1 died in 45 hours after subcutaneous injection of 0·25 milligramme of cobra venom plus antivenomous serum. The degenerative changes in the cortex, pons, medulla, and cord are extreme. The cells are deeply stained but they are much broken up and vacuolated. Some have pieces punched out of their edges, giving them an irregular and ragged outline. Almost none of these cells has any granulation whatever. There seems no doubt that in the majority of the cells their achromatic part is involved and that they are beyond recovery.

Rat No. 2 died in 20 hours after subcutaneous injection of 0·05 milligramme of cobra venom. In the cord not a normal ganglion cell is to be found. Most of the cells are faintly stained with no granules and with a diffusely stained light blue nucleus and some cells have no nucleus at all. Other cells, again, are rather more deeply stained and contain broken up granules. There is no vacuolation to be seen. The appearances in the cortex and medulla are much the same as in the cord.

Rat No. 3 died in three hours after subcutaneous injection of 0·25 milligramme of cobra venom. In this case there is quite a proportion of normal cells but, on the other hand, the majority of the cells show definite degenerative changes. In place of the pale cells of Rat 2 we have deeper staining, some cells having fragmented granules and some no granules whatever. A few cells are very much disintegrated and vacuolated. In most cells the nucleus is central but it is rather ill-defined and diffusely stained. The degenerative changes are even more marked than in Monkey 1 (which died after six hours) and much more marked than in Monkeys 2 and 3 each of which died in rather less than three hours after injection, about the same time as this rat.

We see, then, that in cobra poisoning we have a toxic substance which when injected subcutaneously produces symptoms of muscle paralysis and that when we examine the nervous mechanism which controls these paralysed muscles there is found to be evidence of such degenerative changes as are known to be so frequently associated with paralysis. It seems fairly certain, therefore, that cobra venom has a direct action on the motor neurones. Doubtless this toxin, like most other toxic substances, has also a poisonous action on all the tissues of the body, but with such evidence as we have before us we cannot but conclude that it has a specially selective action on the nervous system and that it is from this that death results. There can be no reason, therefore, to ascribe, as Cunningham did, the cobra poisoning symptoms to blood changes which, even apart from the proof now furnished to the contrary, could not, as one of us has shown, account for them. Certainly not all the animals killed with the venom showed histological changes in the nervous system, for it would seem that time is required for these to develop. And here we would note that in such animals as Monkeys 3, 4, 5, and 6 we have had some difficulty in knowing how to interpret the slight changes found in some of their ganglion cells—whether to call them variations within the limits of what may be normal or to count them as evidence of an early degeneration. There can be no absolute standard to go by, for even in our four control monkeys a certain proportion of the ganglion cells were not without changes in their Nissl granules, and when we are dealing with the very earliest appearances of degeneration it must be difficult to know where to draw the line between what is normal and what is degeneration. We have had this in mind in recording our cases and have described equivocal cases as being normal rather than make the error of finding evidence of degeneration where it does not exist. The degenerative changes in Monkey 1 (dead after six hours) were undoubted. In Monkey 2 (dead after two and three-quarter hours) and Monkey 3 (dead after two and a half hours) the appearances, though not so certain, may quite fairly be taken as showing an early degeneration. Monkey 4 (dead in one and one-sixth hours) is doubtful. Monkeys 5 and 6 (dead in a few minutes) may be considered normal. So that it would seem that two, and possibly three, hours are required to elapse after the injection of the venom before degenerative changes appear in these monkeys' cells. With the rat the time might be less, for in Rat 3 (dead after three hours) the degenerative changes were more marked than even in Monkey 1 (dead after six hours). Possibly the cells of the rat are not so stable as those of the monkey, but in any case one is never so sure of the results obtained in the smaller animals and we mean to deal with monkeys only in the future. One other point we wish to draw attention to is that in the six monkeys dying with cobra poisoning the staining of their ganglion cells was much more intense than that in the four control animals. This may be an accident, but we had to recognise the fact that in decolourising the section the length of time which was required was longer in the monkeys subjected to cobra poisoning than in the normal ones. This may, as we say, be an accident of fixing or staining, but we are disposed to regard it as due to the cobra venom producing some chemical change in the cells themselves.

In concluding, we wish to express our indebtedness to Dr. J. Lindsay Steven for the use of his laboratory and apparatus in carrying out a part of this investigation.

SOME OBSERVATIONS REGARDING THE SPECIAL CIRCUMSTANCES OF CASES OF LEAD POISONING OCCURRING AMONGST WORKERS IN WHITE-LEAD FACTORIES.

BY THEODORE A. W. OGG, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.

THE circumstances influencing workers in white lead factories vary considerably and may be regarded from the point of view of the workers themselves, their susceptibility to the action of the metal and also to the processes employed in the different departments of the works, and the special work undertaken by them. With regard to the susceptibility of the different workers this also varies considerably, so much depending on the habits of the worker, his attention to personal hygiene and his strict observance of the necessary precautions required in all white-lead factories, that it is very difficult, and only after taking all these circumstances into consideration, to arrive at anything like a satisfactory conclusion. Some workers more than others seem to have something like immunity to the action of lead, and it would appear that in those cases after having imbibed a certain quantity of it into their systems they might work for long periods without becoming further susceptible to its action. Those cases are usually seen in well-developed, healthy, and temperate workers, who recognise the ordinary duties of health and the precautionary measures adopted at the works. That the latter have in some degree to do with this immunity is undoubted, yet others who observe the same precautions become victims. One instance of this was seen where the person had been employed in the works for over 40 years. Although decidedly anæmic he showed none of the symptoms which might have been expected after being employed for this period of time in a lead factory. So far as I could ascertain, he was a steady, temperate workman and careful as to his personal hygiene and the factory regulations.

Many of these workpeople come from the lowest classes and to persuade them to give attention to the crudest laws of personal hygiene is a very difficult matter indeed. Many are prone to excess, many subsist on a dietary of tea and bread with an almost total exclusion of fresh fruit and vegetables. It is no wonder, then, that impaired nutrition plays such an important rôle in incipient lead poisoning. The worker thus when idle has only the barest subsistence and after a period of suspension it may be he returns to work with his health at a very low ebb, soon to find himself again the victim of plumbism.

An example of this is seen in the following case. A woman was suspended for three months from work in August as suffering from colic, constipation, and vomiting. During her suspension she had vomited on one or two occasions. She returned to work on March 9th following (seven months later) and had been working for one and three-quarter days in the white-lead department when she was seized with a convulsion at the factory which was followed by three others while she was being conveyed to her home in a cab. There was no previous history of epilepsy. She acknowledged, however, having worked for the one and three-quarter days without using a respirator.

As a rule anæmic young men and women are less resistant, judging from the frequency with which they are attacked. Men are less careful during work than women and are equally susceptible. I have never seen sufficient evidence to cause me to think that women were more susceptible than men. The greatest difficulty in the works was to get the employés to attend to the rules of the factory and amongst others to the use of special drinks provided for them. Anything in the form of a drug was eschewed by them. Sulphur in compressed form was introduced and taken more readily. The period at which a good many showed symptoms of dyspepsia and constipation followed by colic was about six weeks after their commencing to work. This, however, varied and depended partly on the special employment of the workpeople. In the preparation of the carbonate of lead where the Dutch process was used—in which the lead in thin sheets is placed on the top of pots filled with acetic acid and is converted first into the subacetate and finally decomposed by carbon dioxide emitted from tan—the cases were most numerous. Over two-thirds of my cases occurred in this department. It is easy to understand how this should be so. The carbonate which is removed from the stacks (superimposed layers of pots, lead, and tan) by being either carried in trays on the heads of the workers or by machinery (hydraulic cranes) is placed in trolleys to be conveyed to the rolling mills. A cloud of white-lead dust is easily caused to ascend among the workers by careless handling of the lead and especially so when the carbonate has not been properly watered or moistened before removal from the stack. Indeed, where the removal is done by machinery, although fewer workpeople are required, the process is in itself more dangerous as the buckets containing the lead can be lifted and deposited in a more careful manner by the hand. A great deal, therefore, depends upon the way in which the workpeople handle the lead and in this they are often attentive at first but get hardened by association with less careful workers.

A large percentage of my cases from this part of the works presented symptoms of epilepsy, some, indeed, without minor symptoms appearing first, showing, no doubt, that the lead had gained entrance into the system in large quantities, and evidently cases of acute poisoning. Were these cases not also due to the entrance of the poison into the system through the respiratory tract? The facts pointed to this. Indeed, the respiratory tract is perhaps a more potent source than is usually considered, not perhaps in all parts of the works, but certainly in the departments where dust is prevalent. The ordinary respirator worn by the workpeople does not exclude this and a thoroughly good and serviceable respirator has yet to be devised.

Those who worked in the drying chambers, where the temperature was often very high (200° F.), were also frequent victims and after a short time they were usually transferred to less dangerous parts. The smallest number of cases came from the grinding and smelting departments, where wet grinding was carried on. In the red-lead department not more than from 1 to 2 per cent. of cases occurred. The removal of the carbonate from the stacks caused by far the largest percentage of cases and was obviously the most dangerous part of the work, but the suppression of the dust would have made it less so.

Smoking was prohibited in the works but chewing, which is less easily detected, was more practised by the workers. This is one of the ways by which large quantities of lead may gain entrance into the system by the digestive tract. The workman whose hands are covered with white-lead twists off enough tobacco, which in turn gets covered with the white-lead, and this he places in his mouth. In glancing down a file of workers who were being presented for examination I have seen one or two chewing when they thought they were unobserved, but when charged with it they would deny and when asked to open the mouth they would previously swallow the tobacco in order to escape detection.

Such are instances of some of the difficulties to be met with in dealing with workers who use every means to prevent information being conveyed to the officials that would endanger their future employment, and to impose too strict limitations—e.g., to exclude all who are addicted to the abuse of alcohol in these works—would be a very difficult measure indeed to carry into operation. The remedy which would lead to a diminution of the cases of saturnine intoxication amongst white-lead workers seems to lie in the strict observance of the precautionary or preventive measures adopted in these works, in some means by which the quantity of dust in certain departments would be lessened, and to the suspension from work of cases presenting *early* symptoms at the periodical medical examinations as well as the necessity for *each* worker being medically examined and certified fit for work, at intervals of perhaps a week, before being employed. This would tend to prevent employés escaping examination by being absent, wilfully or otherwise, on the day of the visit of the medical officer to the factory.

Fyvie, Aberdeenshire.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ASCITES RAPIDLY CURED ON THE ADMINISTRATION OF IODIDE OF POTASSIUM.

BY JOSEPH A. W. PEREIRA, M.D. BRUX., L.R.C.P. LOND., M.R.C.S. ENG.,
MEDICAL OFFICER, EXETER CITY WORKHOUSE.

A MAN, 25 years of age, was admitted into the Exeter City Workhouse Infirmary on Dec. 28th, 1901. His condition was as follows. The abdomen was distended with fluid. The urine was scanty, high coloured, and showed a distinct trace of albumin. The liver did not seem to be enlarged; its edge could not be felt. There was no jaundice. The heart was displaced upwards and its sounds, though feeble, presented no murmur. There was no œdema about the eyelids, the thorax, or the upper or lower extremities. The face was not emaciated, neither was the complexion anæmic. The man was ordered a drachm of compound jalap powder every alternate morning and a mixture of digitalis, squills, and broom was prescribed. He took his discharge on Feb. 25th, the ascites being slightly more pronounced than on his admission. He returned to the infirmary on March 3rd, 1902. His condition was greatly aggravated and, moreover, his lower limbs, his scrotum, and penis were very œdematous.

For a case like this tapping the abdomen is the recognised treatment. But there were certain noteworthy features in the case. The patient was under the age at which alcoholic cirrhosis is generally seen. He had not the hepatic facies of the tippler. His physical strength too, was remarkable, for he actually walked to the infirmary, a distance of nearly a mile. He presented none of the toxæmic symptoms which one would have expected in ascites of such a grade. The conclusion I came to was that there was pressure on some abdominal vein or veins, possibly the portal, which caused the ascites. All the other signs and symptoms were the natural consequences of the pressure. In a man of his age a gumma was the most probable cause and on this supposition I placed him on 7½-grain doses of iodide of potassium three times a day. The effect of the drug was that of a powerful diuretic. The urine became copious and free from albumin. He took his discharge on April 29th, without a trace of ascites or œdema anywhere. He is at the present moment earning his living as a labourer. I record this case because it is rare for ascites, from whatever cause arising, to disappear completely. It is also the most remarkable one in my experience of the effect of a single drug on a disease, for this man whose heart was very seriously embarrassed by reason of the great abdominal distension left the infirmary within two months perfectly well. It also presented features which, as I have shown above, differentiated it from alcoholic cirrhosis of the liver in which the iodide of potassium would have been useless.

Exeter.

A CASE OF POISONING WITH HYOSCINE HYDROBROMATE.

BY J. C. M. GIVEN, M.D., M.R.C.P. LOND.

ON Oct. 30th, 1903, a man, aged 69 years, came to me complaining of cramps in the muscles of the legs at night and also of senile tremor of the hands. He had been under my care at intervals for several years. Five years ago I attended him through a severe attack of basic pneumonia which was accompanied by much excitement, and then $\frac{1}{100}$th of a grain of hyoscine hydrobromate was used hypodermically with great benefit. At the present time he was in fair health for his age. The pulse was rather quick—about 90 per minute. The heart sounds were normal. The urine was high coloured; it was free from albumin and sugar. I ordered him $\frac{1}{200}$th of a grain of hyoscine hydrobromate in one drachm of water to be taken at bedtime. At 9.45 P.M. on the same day I was hurriedly summoned to see him. I was informed that at 9.15 P.M. one teaspoonful of the medicine was given him by his son (this was confirmed by the amount absent from the bottle). After swallowing it he undressed and got into bed. While undressing he remarked to his wife that his throat felt very dry and she noticed that his speech was rather thick. Two or three minutes after he got into bed his wife heard him breathing very deeply; she tried to rouse him but could not and sent for me. I found him half an hour after he had taken the medicine deeply comatose with stertorous breathing and flushed face. His pulse was 80 per minute and regular, his pupils were dilated and equal, and the conjunctival reflex was very slight; I could not rouse him by any means. I injected $\frac{1}{100}$th of a grain of strychnine hypodermically and gave one ounce of brandy by the rectum. At 10.45 P.M. there was no improvement; the coma if anything was deeper, the conjunctival reflex was quite absent, the pulse was smaller and weaker, and there was some twitching of the arms and legs. I sent for my syphon stomach-tube and for Dr. W. B. Paterson to help me. In the meantime I injected $\frac{1}{3}$th of a grain of morphine with one grain of caffeine citrate. In a few minutes the pupils became less dilated but otherwise there was no change. At 11.45 P.M., with Dr. Paterson's assistance, I washed out the stomach by the syphon tube with hot water, removing a small quantity of partially digested food, and then passed into the stomach about eight ounces of strong black coffee and one ounce of brandy. At 1 A.M. the conjunctival reflex began to return and the patient flinched on pinching the skin on the inner side of the arm. Improvement slowly set in, the breathing became less noisy, and the pulse fuller and stronger. At 3 A.M. he could be partially roused for a moment by pinching and shouting but at once relapsed into a somnolent condition; the pupils now reacted to light. At 5 A.M. he made an attempt to speak and swallowed some coffee. At 8 A.M., that is 11 hours after taking the dose, he was really conscious and able to speak for the first time and he thenceforth made an uneventful recovery.

The prescription, which was for $\frac{1}{200}$th of a grain of hyoscine hydrobromate in one drachm of water with orders to send two ounces, was dispensed at a very trustworthy druggist's, and a very unfortunate and dangerous, though instructive, mistake was made in dispensing it. The druggists in question gave me, I am glad to say, every facility for investigating the matter. It appears that they had two establishments; at the one to which the prescription was taken they had no hyoscine in stock, so the dispenser sent a written message to the other place for 0·08 gr. of hyoscine hydrobromate in two ounces of water, which is equal to $\frac{1}{50}$ths of a grain, the exact amount he required for the whole bottle of medicine; the dispenser at the second shop, seeing that decimals were used, took it for granted that it was a foreign prescription and that "gr." stood for grammes and sent 0·08 gramme which the first man sent to my patient. The result of this was that he got more than 15 times as much as was intended, or about $\frac{1}{3}$th of a grain. This appears to be a good object lesson in the danger of the present condition of weights and measures in the Pharmacopœia, where it is now optional for either the decimal system or the apothecaries' measure to be used. Surely the time has come for the rational and scientific metric system to be enforced as the officinal standard.

The literature of hyoscine poisoning seems to be scanty and points to the fact that the drug is rather uncertain in its action, sometimes producing poisonous symptoms in very small doses while in other cases fairly large doses are tolerated. This is probably due to variations in its purity and mode of manufacture. The hyoscine used in this case was Merck's. Professor J. Dixon Mann in his work on Toxicology states that in one instance $\frac{1}{60}$th of a grain taken by the mouth produced severe symptoms of poisoning, as did $\frac{1}{30}$th of a grain given hypodermically in another. On the other hand, Allan Gray[1] reports a case where $\frac{1}{30}$th of a grain was used every night with good effect. Dr. L. A. Weatherly, who used it largely in asylum practice, in an article in the *Journal of Mental Science* for July, 1891, states that he considers that the dose should be from $\frac{1}{60}$th to $\frac{1}{100}$th of a grain, very cautiously increased in some cases to $\frac{1}{30}$th. With regard to antidotes, besides those used in this case pilocarpine has frequently been employed. I had it with

[1] Brit. Med. Jour., 1892, p. 705.

me but I did not use it and I confined myself to the use of strychnine, morphine, and caffeine, the last both hypodermically and as strong coffee, and it is in a great measure, I think, to the last drug that the patient owes his recovery.

Liverpool.

SUCCESSFUL REMOVAL OF A VAGINAL TUMOUR DURING PREGNANCY.

BY L. C. MARTIN, M.R.C.S. ENG., L.R.C.P. LOND.

ON Oct. 13th, 1903, I was called to see a patient alleged to be in premature labour. The presence of some hæmorrhage rather than labour pains which, as a matter of fact, were absent, made her think that labour had begun. She stated that she was about seven months pregnant. On examination I found a tumour of about the size of an orange protruding just outside the vagina and having the appearance of a polypus. On its lower and posterior aspect there was a slough about three-quarters of an inch in diameter; throughout the greater part of its extent it looked congested and felt somewhat hard. I had no difficulty in replacing it in the vagina, the manipulation, however, leading to some hæmorrhage. I then made a vaginal examination and ascertained that it was not connected in any way with the cervix or os uteri, both of which were perfectly free and normal, but that it was attached along the posterior wall of the vagina. It extended upwards for a couple of inches by a broad and shallow attachment, there being no pedicle. I advised its removal as soon as possible, as I had no doubt that it would prove a mechanical obstruction should labour occur prematurely. In addition to that the danger that might arise from its septic condition in these circumstances could not possibly be overlooked.

On Oct. 15th I operated under A.C.E. mixture and removed the tumour. There was a considerable amount of hæmorrhage during the operation owing to the great vascularity of the tumour; one large vein in particular gave some trouble and had to be ligatured. The oozing after removal was also troublesome and yielded to packing of the vagina with double cyanide gauze soaked in lukewarm carbolic lotion of strength 1 in 50. The subsequent progress of the case was entirely satisfactory and calls for no remarks. On the eleventh day after operation the patient was up. She was confined on Dec. 2nd, labour being quite normal and the child healthy and well developed. The patient's previous history contains nothing of importance. I had attended her two years previously when I had to deliver her with forceps owing to a face presentation.

The following is the report of the Clinical Research Association on the histology of the tumour: "There is no evidence of malignancy in this specimen. It consists of fibro-muscular tissue permeated with very large veins, many of which are thrombosed. The surface is ulcerated and inflamed. These appearances suggest that the tumour was primarily a varix of the vaginal wall which has become polypoid and inflamed."

I have considered this case worth recording for the following reasons: (1) because of the occurrence and removal of the tumour during pregnancy; (2) because of the fact that labour was not induced by the unavoidable and frequent manipulation which the operation and subsequent dressing involved; and (3) because of the rather unusual site of the tumour.

Woolston, Southampton.

CENTRAL MIDWIVES BOARD.—At the last meeting of the Central Midwives Board, upon consideration of applications for certificates the names of 270 women were passed under Section 2 of the Act and ordered for entry on the roll. Of this total 65 claimed as holding the certificate of the Obstetrical Society of London, five that of the Rotunda Hospital, Dublin, one that of the Coombe Lying-in Hospital, Dublin, one that of the Liverpool Lying-in Hospital, eight that of St. Mary's Hospital, Manchester, two that of the Salvation Army Maternity Home, and 188 were admitted as having been in *bonâ-fide* practice for one year prior to July 31st, 1902.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. GEORGE'S HOSPITAL.

CONSERVATIVE OPERATION IN A CASE OF ACUTE SUPPURATIVE SALPINGITIS.

(Under the care of Mr. HERBERT W. ALLINGHAM.)

FOR the notes of the case we are indebted to Mr. T. Crisp English, surgical registrar.

The patient, a female aged 17 years, was admitted into St. George's Hospital on Oct. 20th, 1903. Five days previously she had been seized with abdominal pain referred at first to the umbilical region and later to the right iliac fossa. Vomiting occurred at the onset of the pain and twice on the following day. The pain became more severe in spite of rest in bed; the bowels acted once during the week before admission, no purgatives or enemata being used. Micturition had been painful and the vaginal discharge, which had existed for several months, had become more profuse. There was no history of a similar attack previously and in other respects she had always been healthy; menstruation had been regular, the last flow occurring a fortnight before the commencement of the attack.

On admission the patient was anæmic but fairly nourished. The temperature was 101·4° F., the pulse was 130, and the tongue was dry and furred. Pain was complained of over the entire abdomen but mostly in the right iliac fossa and the knees were drawn up. The abdominal wall moved but slightly with respiration; there were great tenderness and rigidity in the lower part of the abdomen, most marked on the right side; no swelling could be felt and there was no distension or abnormal dulness. A diagnosis of appendicitis or mischief in the right side of the pelvis was made.

Operation was performed by Mr. Allingham about one hour after admission. The abdomen was opened by an oblique incision over the right iliac fossa but the appendix was found to be healthy; further examination showed that the trouble was in the pelvis. The incision was therefore prolonged downwards. The right Fallopian tube was swollen and injected; on pressure a quantity of pus oozed from its fimbriated extremity which was patent. A similar condition was found on the left side but a larger quantity of pus was present; the uterus and ovaries were normal. The case seemed particularly suitable for conservative treatment, as the pelvic peritoneum was only slightly involved and there was complete absence of adhesions. The pus was therefore thoroughly pressed out of the tubes, the surrounding parts were carefully cleansed with sponges and a large strip of iodoform gauze was passed from the lower angle of the wound into Douglas's pouch, and the upper part of the wound was sutured in the ordinary way. No pain, vomiting, or distension followed the operation. The bowels were opened on the following morning by a turpentine enema and flatus passed freely through a rectal tube. The temperature became normal on the third day. The gauze plug was removed three days later and a tube was inserted in its place; this was finally removed on the twelfth day. During the third week the patient had a slight rise of temperature with pain in the left hypochondriac regions but no local signs either in the thorax or abdomen were found to account for this. The symptoms were relieved by antipyrin and bismuth. She got up at the end of the fourth week, the wound being soundly healed, and was sent to the convalescent home on the thirty fifth day after operation.

Remarks by Mr. CRISP ENGLISH.—Only within recent years have conservative operations upon the uterine appendages been advocated and carried into practice. The value of conservative treatment, however, is not yet generally recognised and many still consider that removal of the tube and ovary *en masse* is the necessary treatment for disease of either of these structures. One of the first principles of surgery is to remove as little as is consistent with the safety and welfare

of the patient, yet in the majority of cases of suppurative salpingitis the ovaries are removed with the tube. It is probable, though not certain, that the ovaries produce an internal secretion of essential importance in the maintenance of health in women and this is the strongest reason for urging that they should be left unharmed whenever possible. In certain cases more than this may be done; diseased tubes may be treated locally and may be left in their normal position with a fair probability that they will remain functional.

The possibility of restoration of function in diseased tubes has been clearly proved by clinical experience. Some of the cases thus treated have subsequently required laparotomy for other conditions and the tubes have then been found to be free from adhesions and apparently normal; in other instances pregnancy has followed and thus demonstrated that one at least of the tubes has remained patent.

The objections raised against this treatment are mainly theoretical, for the published records of conservative operations show no increased mortality and it has yet to be proved that the risks of extra-uterine gestation are greater than in patients with normal Fallopian tubes. It is said that chronic pelvic pain as the result of adhesions is a contra-indication to conservatism, but it is doubtful whether these adhesions are greater with conservative than with radical treatment, and even should they give rise to some chronic pain the patient is in a much better condition than if she had had her appendages removed.

The chief arguments in favour of conservative treatment in the case published above were the following. 1. There was the age of the patient; a healthy patient of this age would normally have some 30 years during which menstruation and the possibility of pregnancy would continue. Complete oöphorectomy would have entailed the troubles associated with premature menopause, whilst removal of the tubes would have condemned the patient to certain sterility, and in the case of a young girl these matters are of the greatest consequence. 2. The local conditions were favourable for conservatism. The tubes were free from adhesions, their fimbriated extremities were open, and there was but little reaction in the pelvic peritoneum. If there had been much peritonitis with extensive adhesions the prospects of restoration of function would have been small. 3. The disease was apparently gonorrhœal in origin and the prognosis was thus far more favourable than in cases where the mischief is due to other pyogenic organisms.

ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

CASES IN WHICH DEATH OR COLLAPSE OCCURRED AFTER EXPLORATORY PUNCTURE OF THE CHEST.

(Under the care of Dr. THOMAS OLIVER.)

CASE 1.—The patient was a man, aged 62 years, who when admitted into the Royal Infirmary, Newcastle-upon-Tyne, was supposed to be suffering from an unresolved pneumonia, the sequel of an acute attack which had commenced five weeks previously, and possibly, too, from the presence of fluid in the pleural cavity. There was dulness at the lower part of the right lung posteriorly, reaching as high up as the inferior angle of the scapula. Although the breath sounds were feeble at the base still a few crepitant and submucous râles could be heard there. The heart sounds were weak and there was distinct epigastric pulsation. The expectoration was abundant; it was frothy, muco-purulent in appearance, slightly blood-tinged, and extremely fœtid. No tubercle bacilli were found in the sputum. The temperature was never high. Albumin and sugar were absent from the urine. On the sixth day after admission the senior house physician of that date inserted a needle into the right chest, the patient meanwhile sitting upright in bed. As no fluid was found the needle was withdrawn and reinserted into another part of the chest wall, when almost immediately afterwards the patient fell back in bed dead. At the necropsy the left lung was found to be somewhat emphysematous; the right pleural cavity contained several ounces of pus; the right lung was consolidated at the base and contained two small abscesses.

CASE 2.—In another patient, a man about 36 years of age, exploratory puncture of the pleural cavity did not produce any inconvenience at the time beyond slightly increased rate of breathing, but it was followed a few hours afterwards by delirium. The man became light-headed and died on the following day, death being undoubtedly an indirect result of the puncture.

CASE 3.—In this case, that of a man who had physical signs of fluid in his chest, no fatal effect followed the puncture, but for a period afterwards he was extremely ill. Exploratory puncture of the pleura was in him attended by very marked cyanosis and by the expectoration of large quantities of a thin, foamy mucus. The lividity persisted. For several hours the patient was collapsed and extremely ill but in two days he rallied.

Remarks by Dr. OLIVER.—Since in a large number of cases exploration of the chest by acupuncture has come to be regarded as a necessity, either for the purpose of confirming a diagnosis or for arranging a line of treatment, and is usually a simple and safe operation, it is yet well to remember that now and again, and without any signs of warning, puncture of the pleural cavity may be followed by a fatal result either immediately or a few days after the operation. In the St. Thomas's Hospital Reports, vol. xxxviii., Dr. A. E. Russell draws attention to this subject and gives the details of three cases in which there quickly supervened upon exploration of the chest by the needle a series of alarming symptoms. In one instance, that of a girl eight years of age, there developed lividity, signs of cardiac failure, muscular rigidity, and double convergent squint followed by death. In another patient, a girl, seven years of age, the operation was succeeded by collapse and convulsions; while in a man, aged 52 years, there quickly developed, after exploration of the chest symptoms of cardiac failure, cessation of breathing, convulsions, and loss of consciousness that was never regained. Two of Dr. Russell's patients died within three days after the exploratory puncture—a result attributed to the surgical procedure.

My object in publishing the above cases is to bear witness to the fact of death having occurred in circumstances similar to those mentioned by Dr. Russell. I can recall at least four patients into whose chest the insertion of a needle, either for diagnostic purposes or for determining a particular line of treatment, was followed by fatal consequences.

What is the probable explanation of death occurring in the above-mentioned circumstances? Since in two of Dr. Russell's patients, and in one of my own, exploratory puncture was followed by symptoms suggesting cerebral vascular derangement it may at once be stated that at the necropsies upon the bodies at St. Thomas's Hospital no trace of embolism or of thrombosis was found. Dr. Russell is of the opinion that death was induced through reflex action. When death has followed exploratory puncture of the chest there has probably occurred cardiac and respiratory inhibition. It is more than likely that in some way or other the pulmonary branches of the vagus nerve are irritated and thus inhibition is reflexly induced. In a series of experiments carried out by Dr. Russell and Dr. T. G. Brodie it was found, when the root of the lung in an animal was exposed, that if the pulmonary branches of the vagus were stimulated not only was the ventricular systole of the heart arrested but the breathing ceased as well owing to inhibition of the respiratory centre. Since, too, there is a tendency for œdema of the lung to be rapidly developed, judging from the foamy and sometimes blood-stained expectoration that wells up into the mouth, it would appear as if the vaso-motor centre might become affected. It is also possible that as a consequence of the compression the vagal nerves have been subjected to, or as a result of some inflammatory change, the nerve fibres become unduly sensitive to irritation. Rapid expansion of a collapsed lung under forcible aspiration is a procedure not altogether devoid of danger. Dr. Russell suggests anæmia of the brain as an explanation of the cerebral symptoms. He attributes the anæmia to a sudden fall of the arterial pressure. Death is not, so far as one can tell, the reflex result of pain. Whether the anticipation of pain likely to be caused by the insertion of a needle into the chest may not in a highly sensitive patient favour the occurrence of syncope I am not prepared to say. I have known sudden death occur when an empyema was being emptied, the patient all the time being under the influence of chloroform. Such a circumstance points to the improbability of pain *per se* as the cause of death.

The precautions to be observed are avoidance by the

patient of the sitting posture in bed at the time of the exploratory puncture, the administration by the nurse of brandy shortly before the operation, and should the heart cease beating or the breathing become suspended during or after the puncture immediate resort by the medical attendant to artificial respiration and the injection hypodermically of ether and strychnine.

Medical Societies.

OPHTHALMOLOGICAL SOCIETY.

Arterio-venous Aneurysm of the Orbit.—"Silver Wire" Arteries.—Retinal Effusion.—Pemphigus of the Conjunctiva.—Hereditary Nodular Opacities of the Cornea.—Unilateral Anophthalmos.

A CLINICAL evening of this society was held on Dec. 10th, 1903 Mr. JOHN TWEEDY, F.R.C.S., the President, being in the chair.

Mr. N. C. RIDLEY showed a case of Arterio-venous Aneurysm of the Orbit, recurring six months after ligature of the common carotid. The condition was probably due to a traumatic communication between the cavernous sinus and the carotid artery.—Mr. E. L. PRITCHARD showed a case of the same nature with corresponding result, and experiences in connexion with such cases were narrated by Mr. JOHNSON TAYLOR, Mr. W. ADAMS FROST, Mr. G. HARTRIDGE, Mr. P. FLEMMING, Mr. E T. COLLINS, and Mr. E. NETTLESHIP.—Mr. E W. BREWERTON thought that owing to the free communication between the branches of the two external carotid arteries it would be much better to ligature the internal carotid artery.—Mr. J. H FISHER considered that the result of ligature of the internal carotid must be doubtful, as it probably depended upon the size of the communicating arteries in the circle of Willis far more than upon the communications of the branches of the external carotid. For this reason he thought it unlikely that ligature of the internal carotid would be better than ligature of the common carotid, to say nothing of the much greater difficulties of the operation.—Mr. RIDLEY, in reply, did not think that ligature of the internal carotid would be any more likely to cure the condition than the operation on the common carotid. If he did anything more to his patient he should feel inclined to clear out the orbit, but in this case, as apparently in most of the others mentioned, the patient had derived much relief, although the condition could not be said to be cured.

Mr. FLEMMING showed the drawing of a Fundus with Marked Arterial Degeneration. The patient was a woman, aged 48 years, with granular kidney. She died from apoplexy a few weeks after the drawing was made. During life the arteries had a typical sclerosed appearance with "silver wire" lines along them. There was venous obstruction at the points where they crossed the veins. There were also hæmorrhages in the retina. Microscopic sections were shown of the retina with photomicrographs; there was enormous thickening of the vessels.—Mr. R MARCUS GUNN showed specimens of "silver wire" arteries from a similar case.—Mr. R W. DOYNE showed a woman, aged 54 years, with somewhat similar ophthalmoscopic appearances. Her urine was healthy but the radial arteries were thickened.—A discussion followed on the cause of the apparent constriction of the veins by the arteries.

Mr. DOYNE also showed a case of Retinal Effusion in a patient, aged 65 years, whose sight had recently failed. There was no history of syphilis but years ago he had had gonorrhœa.

Mr. WILLIAM ANDERSON showed a case of Conjunctival Pemphigus.

Mr. W. T. HOLMES SPICER showed a case of Hereditary Nodular Opacities of the Cornea and some drawings. It was, he said, a family disease, though probably not congenital. Fuchs in one case had removed a portion of the cornea and found it softened and Bowman's membrane absent. The deposit, which was amorphous, lay in the substantia propria. One observer had described the deposit as urate of soda but Mr. Spicer doubted whether it were so. The condition was progressive and in Mr. Spicer's example the father and a daughter were affected.—Mr. JOHNSON TAYLOR described a somewhat similar condition that he had seen in puppies; it was thought to be due to malnutrition.—Mr. SPICER said that Fuchs had also seen this condition in dogs.

Mr. A. H. P. DAWNAY showed an infant suffering from Unilateral Anophthalmos. The child was very feeble and delicate and without an anæsthetic it was impossible to say if a rudimentary eye existed.—Mr TWEEDY commented on the term used in describing this case. He thought that the condition should be termed "anophthalmia" and the child described as "anophthalmos."

CLINICAL SOCIETY OF MANCHESTER.

The Treatment of Severe Cases of Accidental Hæmorrhage.

THE monthly meeting of this society was held at the Palatine Hotel on Dec. 15th, 1903, Dr. W. MILLIGAN, the President, being in the chair. There was a large attendance.

Dr. H. BRIGGS (Liverpool) opened a discussion on the Treatment of Severe Cases of Accidental Hæmorrhage. He said he believed that there was a *prima facie* case for reconsideration. He alluded to the original cases of Rigby, published in the sixth edition of the essay on "Uterine Hæmorrhage which Precedes the Delivery of the Full-grown Fœtus." Of the 42 cases of placenta prævia treated by Rigby by turning 31 women recovered and 11 died. Dr. Briggs also alluded to the disproportion of 42 cases of placenta prævia to 64 of accidental hæmorrhage, probably showing that the 64 cases of accidental hæmorrhage included many instances of lateral placenta prævia, Rigby having apparently confined his cases of placenta prævia to those in which the placenta was either over or on the internal opening of the cervix. Allowing for the cases of lateral placenta prævia amidst the 64 cases recorded by Rigby as cases of accidental hæmorrhage there probably remained many severe cases of accidental hæmorrhage; in Rigby's own words: "Many were alarming cases, as the patients had lost large quantities of blood and were extremely faint; not one proved fatal. They all terminated safely by waiting for the efforts of nature to expel the contents of the womb." Rigby had keenly appreciated the sources of danger in the treatment of cases of placenta prævia by podalic version. He avoided the greater risk of too forcible dilatation of the cervix and accepted the lesser one by waiting for sufficient relaxation by pains and discharge before turning the fœtus. The treatment he advocated differed in the two sets of cases. Cases of accidental hæmorrhage (including some of lateral placenta prævia) Rigby treated by palliation and waiting for nature's efforts to complete delivery, and cases of placenta prævia (central, partial, marginal, and some lateral) by more prompt delivery by art by turning. Dr. Briggs went on to say that Rigby did not as a routine practice rupture the membranes and he always before doing so waited for the pains of labour. Dr. Briggs considered that the prominence accorded to Rigby's observations and conclusions in this country was justified by a study of earlier, contemporary, and later work. Dr. Briggs then reviewed the earlier history of the subject, illustrated the improvement in the results of the treatment of cases of placenta prævia achieved by the adoption of gentler and more precise methods of controlling the bleeding, and asked whether corresponding improvements in the results of the treatment of severe cases of accidental hæmorrhage had been shown. He pointed particularly to the recent statistics of the Rotunda Hospital supplied by Dr. W. F. Colclough in a paper on the Treatment of Accidental Hæmorrhage published in the *Journal of Obstetrics and Gynæcology of the British Empire* in August, 1902. He considered that the Rotunda Hospital method (the application of pressure by an abdominal binder, vaginal tampon, and perineal bandage) seemed to have been effective in controlling the hæmorrhage in the most difficult class of cases to treat, in which, with accidental hæmorrhage, the os uteri was closed and there were no pains of labour. The patient suffered from shock but possessed a chance of recovery. He considered that the maternal mortality in this alarming complication had been reduced to a more encouraging level by the Dublin method. In conclusion, he quoted cases from his own practice.

Dr. W. K WALLS remarked that some five years ago he had summarised his observations on 38 severe cases in a contribution to the North of England Obstetrical Society. He considered the term "accidental hæmorrhage" a misnomer and in some measure responsible for unsatisfactory treatment. He believed that the cases should be regarded as

influenced by some toxæmia of pregnancy and instead of "accidental" would prefer to speak of "avoidable" or toxæmic hæmorrhage, for the patients almost invariably expressed themselves as "never having been well during pregnancy" and in the majority of very severe cases the urine was loaded with albumin. When face to face with the grave emergency of a very severe case Dr. Walls mentioned the three great indications which guided his practice: first, to improve the patient's condition by quiet, rest, food, stimulants, and warmth, and encouraging the uterus to overcome its inertia by friction, binder, and vaginal plug, or de Ribes's bag. In the absence of proper uterine action, as shown by the cervix undergoing dilatation, Dr. Walls strongly condemned the practice of rupturing the membranes. The second indication was to deliver the patient if improvement ceased to follow the preliminary treatment (and this indication might include an *accouchement forcé*. Thirdly, it was necessary to guard especially against post-partum inertia and hæmorrhage.

Dr. W. J. SINCLAIR said that in his opinion true cases of accidental hæmorrhage were extremely rare, not more than 1 in 10,000, but when they did occur energetic treatment was demanded.

Dr. T. A. HELME agreed with Dr. Sinclair that interference by art was necessary, so that if there was a fatal result they could not reproach themselves that the patient had died before their eyes without anything having been attempted.

Dr. W. E. FOTHERGILL explained the rationale of the Dublin treatment of accidental hæmorrhage. A healthy uterus could not be distended to more than a certain extent, therefore if escape of blood from the cervix could be prevented by vaginal plugging the tension within the uterus would soon equal the blood pressure and bleeding should cease. In a diseased uterus, however, distension could go much further than in a healthy one and thus in cases of concealed hæmorrhage most of the blood in the body might escape into the uterus. An advantage of abdominal section in these cases was that if uterine inertia from local disease or any other cause should persist after delivery of the fœtus the uterus itself could be removed, a course which would give the patient the best chance in very serious cases.

Dr. P. R. COOPER thought that cases of severe accidental hæmorrhage were not very rare. The chief guide to correct treatment should be the condition of the uterine muscle. Where this was active or responded to stimulation, expediting delivery by the ordinary methods, or even by Bozzi's dilator, would probably suffice. Where, however, the uterus was completely inactive and irresponsive, forcible extraction was absolutely contra-indicated. A Porro's operation would probably give the patient the best, if not the only, chance of recovery. Regarding the after-treatment of the hæmorrhage and shock adrenalin was suggested as likely to prove useful for both indications.

Mr. E. STANMORE BISHOP urged definition of the object of the discussion and the more scientific consideration of the anatomy of the vessels supplying the blood lost. He pointed to the advantages of compression of the aorta to control the arterial supply and the elevation of the lower half of the body and legs to affect the venous supply. The essential thing was to keep the respiratory and cardiac centres supplied and so to obviate the tendency to death.

Dr. W. Y. MARTIN remarked that nothing had been said about ergot or ergotin and their preparations.

Dr. P. TYTLER suggested that in extreme cases as a last resource a clamp might be applied to the broad ligament so as to cut off the arterial supply of the uterus, but he did not know whether this had been tried.

Dr. BRIGGS replied and thanked the society for the interesting discussion on the views enunciated in his paper.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this society was held on Dec. 16th, 1903, Professor JOHN CHIENE, the President, being in the chair.

Mr. C. W. CATHCART exhibited a female patient after Removal of a Calculus from the Common Bile Duct. For about 25 years she had suffered from various forms of gastric disturbance but whether these were associated with the calculus was unknown. For about a year, however, she had complained of severe dyspepsia with paroxysms like those due to gall-stone. As she was stout a long linear incision had to be made and a large stone was found impacted in the common duct. It could not be forced onwards so it was removed through the duodenum. The latter with the head of the pancreas was lifted forwards by Kocher's method of freeing the peritoneum, and the intestine having been opened on the free aspect the stone was removed. The patient has made an excellent recovery and can now eat anything, whereas formerly she could not take animal food.

Mr. J. M. COTTERILL showed the four following cases:—1. A man, aged 29 years, with Recurrent Sarcoma of the Shoulder manifesting marked improvement under treatment by the x rays. In January, 1903, Mr. Cotterill had removed a small sarcoma from the left shoulder of this patient. He returned to the infirmary, however, in October with a great recurrence of the disease. The man was exhibited at the meeting of the society on Nov. 4th when there were large ulcerating areas on the dorsum of the left shoulder as well as a marked growth in front. He had had 38 exposures of four minutes each to the x rays, or almost daily treatment, and whereas on Nov. 4th the lump was of the size of the fist, bleeding and fungating, it had now shrunk to a very small brawny infiltration. On commencing this treatment the pain disappeared at once and the bleeding within a few days. He had also increased six and a half pounds in weight. The growth was previously inoperable on account of its adhesions to the structures at the root of the neck but now it might be removeable. 2. A boy after Enterectomy for Tuberculous Stricture. He had for six months been ill with intermittent paroxysms of pain in the abdomen occurring every ten days, though between the attacks he was perfectly healthy and ate anything. The case was diagnosed as one of tuberculous peritonitis. On opening the abdomen a stricture of the intestine was discovered in a tangled mass of tuberculous tissue. The stricture was removed and the lumen was found to be so contracted that it only admitted a No. 6 catheter and yet had allowed the free passage of food between the paroxysms. 3. A man after Laminectomy for Paralysis of two years' standing. The patient, who was aged 36 years, had had complete sensory and motor paralysis of the legs, the anæsthesia extending as far upwards as the level of the anterior superior spines. Heat and cold sensory impressions were absent. The urine had a specific gravity of 1003 and was alkaline. On examination a projection of the ninth dorsal vertebra was found. At the operation the laminæ of the eighth, ninth, and tenth dorsal vertebræ were removed and a tuberculous lesion was found which had led to a bony deposit so constricting the cord that at one point the lumen was only of the size of a No. 12 catheter. In four months after the operation the patient went home much improved and at the end of the year he could walk almost perfectly. His urine was normal and could now be retained for several hours. His present occupation entailed his standing or walking almost the whole day. 4. A woman, aged 35 years, with a Tumour of the Frontal Bone. Mr. Cotterill was not prepared with a diagnosis; its slow growth was against its being a sarcoma.

Dr. A. LOGAN TURNER exhibited a girl, aged 12 years, after operation for Extensive Osteo-myelitis of the Temporal Bone, but not involving the middle ear. She had never had middle-ear disease and the membrane was intact and hearing was normal. A gradually increasing swelling formed behind the right ear, the bone felt distended, and the skin became discoloured. There was no rise in temperature until the evening preceding the operation. On incising the skin extensive mastoid disease was found extending to the lower part of the squamous portion of the temporal bone as well as to the occipital bone, the osseous tissue being full of pus and granulations. A large amount of bone was removed and the antrum was opened into. No evidence of tubercle was obtained but on examination of the sputum pneumococci were found.

Dr. TURNER also exhibited a girl, aged 10 years, after operation for Mastoid Abscess and Phlebitis of the Lateral Sinus with Ligation of the Internal Jugular Vein. At the operation the internal jugular vein was found to be thrombosed so it was ligatured and a large part was removed. Later the clot in the lateral sinus sloughed out. The child was making a good recovery.

Dr. H. ALEXIS THOMSON exhibited (1) a female patient after Partial Gastrectomy for Cancer; and (2) a lad, aged 18 years, after operation for Perforated Gastric Ulcer. This latter was the youngest male patient whom Dr. Thomson had met with presenting this affection. For three weeks

previously to the perforation he had suffered from gastric pain and vomiting.

Mr. F. M. CAIRD sent the following four cases:—1. A female patient after removal of a Malignant Stricture of the Pylorus and Malignant Stricture of the Jejunum. This double development of carcinoma was a very rare condition. As the diseased areas were widely apart, after the excision of the pyloric tumour a gastro-enterostomy was performed and then the tumour of the jejunum was removed. 2. A patient after operation for Hour-glass Contraction of the Stomach. 3. Two patients after Gastro-jejunostomy for Hæmorrhage. Both were cases of gastric ulcer and the object was to drain the stomach while giving no treatment to the ulcer itself. Both operations were successful in stopping the hæmorrhage. 4. A boy with Coxa Vara which looked like a case of congenital dislocation of the hip-joints, there being marked lordosis and projection of the great trochanters.

Dr. GEORGE A. GIBSON exhibited a boy with Peripheral Neuritis produced by arsenic. He suffered from chorea and was treated with 15 minims of liquor arsenicalis thrice daily for three weeks. The neuritis affected both feet, the left being the worst. The knee-jerks were absent and the muscles were atrophied. The condition was improving under massage.

Dr. ALEXANDER BRUCE sent (1) a woman, aged 35 years, suffering from Paralysis Agitans; and (2) a very unusual case of Post-hemiplegic Tremor. The second of these patients, a female, had an attack of hemiplegia 18 months ago but recovered and six months later these curious movements commenced. The tremor consisted of very rapid flexion and extension movements of the fingers and thumb as well as of the wrist and at first amounted to 130 per minute. The movements were quite unlike the usual slow athetoid tremor subsequent to hemiplegia. On excitement they were greatly exaggerated and ceased during sleep, though this might be due to the fact that she slept on the affected arm so as to keep it quiet. Under the action of bromides and valerian there was a distinct improvement.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Dec. 15th, 1903, Dr. H. Argus, the President, being in the chair.—Dr. T. Jason Wood read notes on a case of Hydatid Cyst simulating enlarged prostate and causing complete retention of urine. The patient was a man, aged 68 years, who suffered from complete inability to void his urine. It was impossible to obtain any history as he was almost completely deaf and was of deficient intelligence. His friends knew nothing of what he had been doing for some time past. The bladder was distended up to the umbilicus and was relieved by a soft catheter which at first passed easily but after a few days only a silver instrument could be used successfully. Examination per rectum showed a large firm swelling in front of the rectum; it was smooth and rounded and no nodules were felt on it. A diagnosis of hypertrophied prostate (? tumour) was made. The patient was a healthy-looking man and showed no physical signs of disease. The urine was clear, acid, had a specific gravity of 1010, and contained no albumin at first. On the day of the operation, however, a trace of albumin was found. On August 6th suprapubic cystotomy was performed. On opening the bladder the swelling was at once seen, covered by the mucous membrane of the bladder. The urethral opening was in front of the swelling and hidden by its projection into the bladder cavity. On incising the bladder mucous membrane it was found to strip readily from the swelling and the latter was seen to be covered by a dense parchment-like membrane. It was not found practicable to enucleate the tumour owing to the limitations of the wound in the bladder and the depth to which it extended. The covering of the tumour was then incised and the nature of the case made evident by the escape of a large quantity of hydatid daughter cysts. As much as possible of the cyst wall was cut away from the front and the cavity was packed with gauze, the end of which was brought out through a wound into the cyst through the perineum. The peritoneal cavity was accidentally opened during the attempt at enucleation of the cyst. The bladder wall was sewn up with interrupted catgut sutures, the suprapubic wound was partly closed, and a large drain was inserted. The patient did well for 12 days after the operation except that he was troubled with hiccough; this, however, ceased on the sixth day after the bowels had been well moved. There was no escape of urine through the perineal wound, there were no signs of peritonitis, and both wounds looked healthy. The temperature was normal but the pulse was quick (110 per minute). He took nourishment well. On the thirteenth day he became lethargic and refused his food, coma gradually supervened, and he died on the fifteenth day after the operation, apparently from uræmia. Post-mortem examination showed the cyst in the recto-vesical space; the peritoneal cavity was shut off by adhesions and the bladder wound was healed by soft tissue. The kidneys were cystic and their total weight was eight ounces. The ureters were dilated. There were numerous small cysts in the liver with no sign of hydatid disease elsewhere. The prostate was natural in appearance and size and in close relation to the cyst wall. The other organs were fairly healthy.—Mr. F. Farrow, Dr. B. H. Slater, Dr. David Goyder, Dr. J. B. Hall, and the President made remarks on the case.—Dr. Goyder made remarks on a case in which there were Peculiar Phenomena attending Menstruation.—Dr. F. W. Eurich read notes on a series of cases of Epilepsy in which "fits" were not the prominent symptom. In some of them there were acute maniacal attacks with homicidal tendencies. In one case lapses of consciousness occurred in which the patient wandered away and did not remember where he had been.—Microscopical and pathological specimens were shown by Dr. Eurich, Dr. Slater, and Dr. C. M. F. Althorp.

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on Dec. 10th, 1903, to hear a paper by Dr. W. D'Oyley Grange of Harrogate on Normal Saline Baths. Dr. Thomas Richmond, the President, occupied the chair.—Referring in the first place to the presence of sodium chloride in the tissues and fluids of the body, Dr. Grange proceeded to speak of the preservative properties of saline solution on dead tissues as compared with the action exercised by plain water. The outlines of treatment of rheumatic conditions at Harrogate were sketched and the speaker went into considerable detail as to the action of saline solution as compared with plain water in various forms of disease. The power of saline fluid as a stimulant and reviver in a depleted body, when injected by a vein or into the tissues, was briefly referred to, and this power Dr. Grange attributed to the readiness of absorption of the saline solution; plain water was not so readily absorbed by the tissues as plain water was not a normal constituent of these tissues. In dermatology saline fluid was of prime importance. The action of hot sea water and mineral water baths on the skin was explained by the existence of the non-irritating and even soothing effects of normal saline fluids. The difference in the ability for being absorbed was very marked between plain water and normal saline solution, so much so that whereas plain water might act as an aperient when taken by the mouth, normal saline solution had the reverse effect, its readiness of absorption having a very marked action on the kidneys. It was for this reason that he advocated the use of plain water at night and saline solution in the morning. Describing the waters of Harrogate Dr. Grange mentioned that the two principal ingredients of these waters were sodium chloride and sulphur which, next to sodium chloride, was most necessary to the metabolism of the body. Harrogate water or normal saline solution taken in the morning prevented uricæmia. Dr. Grange finally enumerated a number of conditions which called for the exhibition of normal saline solution; it was used for flushing the peritoneal cavity in cases of septic peritonitis; it was also useful in the washing of wounds; it was called for when washing was required or desired in irritable conditions of the skin; and its exclusive use was regarded almost as a specific in "chapped" hands. While speaking of rheumatism, especially of the low, subacute, or chronic variety, Dr. Grange emphasised the necessity of inquiring very carefully after any possible septic focus which might render the case intractable to treatment, and otorrhœa, rhinitis, balanitis, gonorrhœa, leucorrhœa, and anal fissure were instanced as having an etiological interest in this connexion. In cases where such might not be discoverable the drainage was advised to be investigated. In rheumatism in women, too, the condition of the generative system, and especially the pelvic organs, ought to be carefully reviewed.—The subject was very fully discussed by the members and some interesting points in the septic theory of the causation of rheumatism were brought out.—A cordial

vote of thanks, on the proposal of the President, seconded by Dr. Renton, was accorded to Dr. Grange.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The third meeting of the session of this society was held at the Guildhall, Windsor, on Dec. 16th, 1903. Mr. W. B. Holderness, the President, being in the chair.—Dr E. B. Hulbert read a paper entitled "The Importance of an Adequate Fluid Intake in Various Morbid Conditions." He said that the normal quantity of water that should be taken to compensate the daily loss should not fall below 40 or 50 ounces and mentioned among the various morbid conditions due to deficiency of liquid intake gout and its different manifestations. Migraine often connected with gout was, he said, much benefited by increasing the amount of liquid consumed. The relation of temporary increase of intraocular tension to migraine was alluded to and attention was drawn to the good results obtained by increasing the fluid intake in this condition and also in progressive myopia. The value of increasing the aqueous intake in anæmia was also mentioned and stress was laid on the importance of adding plenty of water to each dose of iron. Dysmenorrhœa was also specified, as also was the collapse following severe gastro-enteritis and hæmorrhage. Finally, Dr. Hulbert alluded to a case of bilateral parotitis in an aged patient which had apparently yielded to this line of treatment.—Dr. Alexander Haig, while agreeing with Dr. Hulbert that in gout and similar conditions where poisons were circulating in the blood free dilution of the blood would be likely to benefit the patient, said that it was difficult to explain that in migraine where the blood pressure was high good results should follow the ingestion of fluids—a proceeding which tended to raise the blood pressure. The same difficulty presented itself in other diseases mentioned by Dr. Hulbert, anæmia and dysmenorrhœa, where in practice Dr. Haig's conclusions did not tally.—Dr. Rayner D. Batten said that though he had no experience of gauging the blood pressure by the instrument employed by Dr. Haig his finger told him that copious draughts of water tended to lower the blood pressure, and he thought that this was the common experience. In treating acute glaucoma he thought that the time allowed was too short for treatment on general lines to do good. Besides, glaucoma having a more or less mechanical origin, treatment by operation seemed to be the most reasonable plan. He thought, however, that Dr. Hulbert's line of treatment might prove useful as a preventive measure. With regard to progressive myopia he said that the question as to why the sclerotic yields in this disease was still unanswered. In prescribing spectacles one was only treating the symptom of a disease, and he thought that it was quite possible that subsequent experience would prove that it was a cardio-vascular change. He concluded by expressing the hope that more work would be done in this direction and his belief that such work would tend to show that Dr. Hulbert's advice as to the treatment of progressive myopia was based upon sound principles.

FORFARSHIRE MEDICAL ASSOCIATION.—The third ordinary meeting of this society was held in the University College, Dundee, on Dec. 11th, 1903, Dr. W. Graham Campbell, Vice-President, being in the chair.—Patients and specimens were shown by Dr. J. S. Y. Rogers, Dr. J. Mackie Whyte, and Dr. W. E. Foggie.—Dr. R Stirling of Perth gave an account of a case of Gastric Ulcer with Perforation which he had treated by suturing. The convalescence was delayed by diaphragmatic pleurisy following operation. He had kept up rectal feeding for a week after the operation.—Professor David MacEwan referred to the difficulty in the diagnosis of such cases. In most suspected cases he thought that it was safer to operate.—Dr. Mackie Whyte mentioned a case of recovery after symptoms all of which pointed to perforation. He discussed the advisability of giving morphine in small doses so as not to mask the symptoms.—Dr Stirling replied that in his case there were almost no symptoms of previous gastric mischief.—Dr. C. Templeman introduced the subject of the Municipal Supply of Sterilised Prepared Milk. He emphasised its importance and pointed out the success which its adoption in Liverpool, Battersea, and Leith had met with. He mentioned it as one possible preventive of the growing infantile mortality in Scotland and especially in Dundee. One thing, however, that must be guarded against was the inducement to mothers to shirk the proper nursing of their children. He considered that for the ultimate success of the proposed scheme the support of the medical profession of the city was necessary.—Professor A. M. Stalker thought it would be well not to cherish too high hopes of the success of the system to begin with. The people must have natural intelligence and natural affection, while a great deal depended on what happened after the baskets of nine bottles were handed over to the mothers. The system was a means of bringing before the working class the extreme importance of infant feeding, in which direction an immense amount of good could be done by the municipality. He considered it a good scheme and one which in the long run would be sure to impress itself on the populace.—Dr. A. P. Low dwelt on the necessity of proper veterinary inspection of dairies and spoke of the impossibility of cleaning the long glass tubes in some feeding bottles.—Dr. R. C. Buist proposed a motion pledging the meeting to support Dr. Templeman and approving of his scheme.—Dr. Mackie Whyte, in seconding, said he thought that medical men should disabuse their minds of the idea that sterilised milk in infant feeding caused infantile scurvy and quoted Sir Thomas Barlow in support. Infantile scurvy had been caused by too long feeding on malted foods.—This motion was adopted unanimously.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 16th, 1903, Dr. J. Nigel Stark, the President, being in the chair.—Specimens were shown by Dr. Carstairs C. Douglas, Dr. R. Jardine, Dr. J. K. Kelly, Dr. G. Balfour Marshall, Dr. A. McLennan, Dr. A. Louise McIlroy, Dr. Russel (for Dr. J. Edgar), and Dr. Taylor.—Dr. G. Scott MacGregor read a paper on the Management of Anterior and Posterior Displacements of the Uterus. The paper was discussed by Dr. Kelly, Dr. McLennan, Dr. Marshall, and Dr. Russel.—Dr. McLennan read notes of a case of Sarcoma of the Uterus. Hysterectomy was performed. The uterus was much enlarged. When split open it was found to contain a tumour involving the whole posterior wall and almost rupturing into Douglas's pouch. Dr. McLennan attributed the enlargement of the uterus to the poison secreted by the tumour acting on the myometrium.—Dr. J. Lindsay showed a Double Monster (Thoracopagus) and read a clinical note by Dr. Edgar. All the serous cavities in the two fœtuses were separate except the pericardium which was single and contained the hearts. The organs were normal except that the liver was composite. Dr. Lindsay gave a description of the circulatory arrangements.

Reviews and Notices of Books.

Sir Henry Wentworth Acland, Bart., K.C.B., F.R.S., Regius Professor of Medicine in the University of Oxford: a Memoir. By J. B ATLAY, late Scholar of Oriel College, author of "Lord Cochrane's Trial before Lord Ellenborough." London: Smith, Elder, and Co. 1903. Pp. 507. Price 14s. net.

IT is rather to be feared that this book may fall chiefly into the wrong hands: that it will not be seen by many who would be greatly interested in the record of a full, active, and useful life; and that, on the other hand, it will be read or at least looked into by many who have been taught to regard Sir Henry Acland as a great physician and who may therefore be disappointed in the record given. As a physician he was rather good than great and the course of events took him far afield from the quiet routine which is almost essential to the successful work of a leader of medical science.

To understand thoroughly the essential characteristics of Sir Henry Acland it is necessary to appreciate his hereditary disposition and his upbringing and it may be best to say first a few words on these points, for if they are not kept in mind a reader who had never met him in life and who for the first time makes his acquaintance through this book may be inclined to form an opinion of him which is not justifiable and to conclude that his undoubted success was due rather

to luck than to the solid and great qualities which he undoubtedly possessed.

There is a saying in Devonshire—and as it is quoted in the book, we can refer to it without apology—that "the world is made up of men, women, and Aclands." Like most sayings which live it is not without meaning. Acland appears always to have judged things and people from his own particular standpoint. Fresh from Harrow, Oxford, and the plains of Troy, he was ready to write in the manner of an old stager on life in London, as learnt from a study of the medical students at St. George's Hospital. He resembled in some respects the amiable Mr. Barlow and had he been wrecked on a desert island it would probably not have seemed incongruous to him to adopt on Sundays the chimney-pot hat, without which, it may be remembered, Mr. Seagrave never walked abroad. A disquisition on the advantage of savings banks which Acland gave to some naval boys after presenting them with a shilling each did not apparently convert them to his views on these estimable institutions and he expressed himself as being shocked that so large a sum as the one which he had given to each of them should be expended in the acquisition of nuts and oranges—a course which he suggested might have been adopted by monkeys. Acland indeed took himself very seriously and resented it when he was not so taken by others. On a yachting cruise he drew up a series of rules and recommendations which were printed and hung up on deck for the instruction of the crew and of his guests. Amongst the rules was one "to obtain information as to sanitary wants of fishing villages and fishing populations whenever possible." On one occasion the exhilaration of a wet day ashore tempted some of his guests to write a somewhat playful report on the sanitary state of a fishing village. It was "received with eloquent silence and never referred to again."

A sense of humour is not a universal gift and if the general reader will pardon Acland for the deficiency he may find very much of interest in the book, for it shows clearly enough how great was the work he accomplished, how loveable he was as a man, how attractive to his friends, and how good to the poor. His life at Harrow was not happy but at Oxford he met John Ruskin who became his life-long friend. In the year of the accession of Queen Victoria—a period which seems very remote—he started for a tour to the East, visited Athens, Rome, and Constantinople and made drawings of the seven churches of Asia. Whilst a student at St. George's he preferred to the society of his fellow students that of Mr. George Richmond, the painter of Ruskin, of Newton of the British Museum, and of Philpott, then a master at Charterhouse, afterwards Canon of Hereford. At this period Richmond made a very fine drawing of him, which is reproduced in the book. It is curious that Ruskin either disliked it or thought it not good.

Acland soon left London and studied in Edinburgh. His health was delicate and Brodie warned him that if he settled in London he would not live till he was 40 years of age, and added that the "well-informed and intellectual society of Oxford" would be good for him. He was appointed to Lee's Readership and he married Sarah Cotton. His marriage proved the greatest blessing and gave him a fixity of purpose which he might never otherwise have obtained. Mrs. Acland became an ideal housewife and mother, was the kindest and most considerate of hostesses, and exercised the strongest power for good on what may be called the domestic university life of Oxford. Acland from time to time entertained successively and pleasingly a number of strange guests, a thing impossible in the absence of a hostess endued with kindness, with tact, and with common sense. Of the work done by Acland during the cholera epidemic of 1854 nothing need here be said and the great fight of his life—that for the establishment of the science museum at Oxford—is too well known to be here repeated. In 1857 he was appointed Regius Professor of Medicine and it is in that position that he was best known to the world at large. In 1858 he travelled with the King (then Prince of Wales) to Canada and his visit to America proved a great success and increased the number of his friends. Acland regretted the position taken up by Samuel Wilberforce in regard to science and saw clearly that it was untenable; he equally regretted the action of Owen in regard to Huxley. The book contains a very characteristic letter by Tyndall in which he says that, in his opinion, the English clergy appear to him "to be specially endowed with the capacity of bringing into contempt the noblest aspirations of the human mind."

Acland was a great hater of injustice and was profoundly disgusted with the treatment meted out to Sir Bartle Frere who was in turn disgracefully ill-used by Lord Beaconsfield and by Mr. Gladstone. A thoroughly religious man he saw the weakness of the position taken by Gladstone on "The Impregnable Rock of Holy Scripture"; his own teaching—which had the entire approbation of Henry, Cardinal Newman—is concisely expressed in one sentence of his Harveian Oration. "No student of Nature worthy of the name looks on the problem of this world as other than vast and inexplicable. He pretends no more than to see by an image darkly and to bend before the cause of all which is by us unattainable, by us only comprehensible."

No one interested in the religious and scientific life of the middle of the last century can afford to ignore this book. Everyone familiar with the chief personalities of the last half of the century will read much of it with interest. Mr. Atlay must be congratulated on having carried out conscientiously and well a work which must have cost him time and no little anxiety, for to write a fair, critical, and true biography is a literary achievement of no small merit.

The Practical Study of Malaria and other Blood Parasites. By J. W. W. STEPHENS, M.D. Cantab., D.P.H., Walter Myers Lecturer in Tropical Medicine, University of Liverpool; and S. R. CHRISTOPHERS, M.B. Vict., I.M.S.; Members of the Royal Society's Commission on Malaria in Africa and India, 1898-1902. London: Longmans, Green, and Co. 1903. Pp. 378 xxxv. Price 10*s.* net.

IN recent years the subject of tropical medicine has been enriched by many notable works. The student of to-day has the great advantage of Dr. Scheube's encyclopædic treatise on tropical medicine, of Sir Patrick Manson's book, of Dr. Daniels's recently published "Laboratory Studies in Tropical Medicine," and lastly of the work now under review. The major portion of this publication is occupied with the subject of malaria and contains some very useful details in connexion therewith. The last chapters tell us of blackwater fever and the facts concerning the hæmamœbidæ, Texas fever, African coast fever, spotted fever, spirillar fever, trypanosomata, and the filaria.

In considering the subject of malaria the authors give us an account of the best and most simple technique according to their knowledge gathered from the extensive experience of several years and their labours on the Royal Society's Commission on Malaria. They have found that for ordinary work it is better to use almost entirely dry films and the book opens with a description of the technique by which the latter are prepared. The making of wet films is also described. In the staining of films preference is, we think rightly, given to Romanowsky's method which is fully described. Leishman's stain is also dealt with, and this is, perhaps, easier to carry out. The description of normal blood next follows and is succeeded

by an account of the abnormal constituents of the same. In the third chapter the important subject of the malaria parasite is treated very fully. Then we come to certain subsidiary signs of the affection and the differential count of the leucocytes. The description of the examination for the presence of the parasites in the tissues follows. The Cambridge rocking microtome in its ordinary form suffices for all practical purposes. The student is then taught how to imbed, the precautions in the matter of imbedding are detailed, hints on the cutting of sections are given, and this part of the subject terminates with directions concerning the staining and mounting of the sections. Altogether this chapter is an excellent one. We next find a sufficient account of the life-history of the malarial parasite. The description of the mosquito follows. The ovum, the larva of the mosquito together with other larvæ, the nymphæ, and their examination are next portrayed, and then follows a very useful chapter on the capture and experimental feeding of mosquitoes. The methods of the dissection and examination of mosquitoes for the malarial parasite are given very fully, the chapter containing this account being one of the most valuable in the work. After describing the internal anatomy of mosquitoes the authors next tell us how to collect mosquitoes, how to kill them, and how to mount them. Theobald's classification is mentioned. The more common situations in which the anophelotes breeds are collected together in a very useful table. Those whose duty it may be to investigate the endemic malaria of any place will find in the chapter relating to this part of the subject the fullest directions. The estimation of the red cells, of the leucocyte count, and of the hæmoglobin and the blood platelets is next considered. We note the authors' opinion that there is practically no difference between quinine hæmoglobinuria and blackwater fever; this, however, will not be admitted by a great many observers. It is stated by Dr. Stephens and Dr. Christophers that blackwater fever occurs only in those who have previously suffered from malaria. If this theory really be true it is at least remarkable that we have never seen blackwater fever in India, although many hundreds of cases of malarial fever treated by quinine have passed through our hands. The organisms of Texas fever, African coast fever, spotted fever, yellow fever, and spirillar fever receive due attention. The last two chapters deal with the trypanosomata and the filaria and the work closes with a very useful appendix on the blood-sucking flies and a description of the various stains, mounting media, and the apparatus required for work in the tropics. We have thus briefly reviewed the scope of this interesting work which, supplementing the excellent treatise of Dr. Daniels, will be found of great value to observers in the tropics.

Hypnotism, its History, Practice, and Theory. By J. MILNE BRAMWELL, M.B., C.M. Edin., author of numerous articles on the Practice and Theory of Hypnotism. London: Grant Richards. 1903. Pp. 477. Price 18*s.* net.

"The author" of this book, we are told by the publisher, "has devoted the last 12 years to hypnotic practice and research and his personal observations of the practical work done in France, Germany, Sweden, Holland, Switzerland, and Belgium should also make the volume a valuable addition to the science of a subject which is exciting much interest at the present time." In the introductory chapter the author tells us that in the course of the volume he proposes "to refer not only to his own hypnotic 12 years' practice and research but also to give such a general account of the subject as can be brought within reasonable compass." Examining Dr. Bramwell's book in the light of his own account of his intentions we doubt if he has fulfilled the promises made. One chapter is devoted to the early history of hypnotism; it is short and very incomplete; for example, the account given of Mesmer is fragmentary. The work of Elliotson, of Esdaile, and of Braid is more fully treated. The section on the later History of Hypnotism contains an account of the practice of Dr. A. A. Liebeault of Nancy. A section follows entitled "History of My Own Practice." The remaining part of the book is devoted to dissertations on the methods of inducing and terminating hypnosis, susceptibility to hypnosis and the causes which influence it, the experimental phenomena of hypnosis, and the management of hypnotic experiments and an account of the "different stages of hypnosis." The therapeutic use of hypnotism is dealt with in chapters on hypnotism in medicine and surgery and in one on the management of medical and surgical cases. This is followed by a disquisition on hypnotic theories which occupies 150 pages, or nearly a third of the whole work. A chapter is devoted to "the so-called dangers of hypnotism" and this is followed by a summary, conclusion, and list of references. Of the two appendices one is the late Dr. Williamson's account of the origin of Braid's work and the other is a note on spiritualism, clairvoyance, and telepathy.

The general effect produced by the book is a feeling of wonder that such a subject, with all its suggestions of mystery and occultism bred of our imperfect knowledge, can have led to the production of so unstimulating a book. Doubtless Dr. Bramwell was particularly right to treat his subject very seriously, but he might have taken more steps to arouse and to hold our interest. The work would gain much if it were rearranged and rewritten so that the history of the subject and the theories of its various exponents were placed together. For example, the life of Esdaile is given in one place, while his theories will be found in another. The author's views naturally pervade the book, but while lessons from personal experience are of the utmost value in all medical treatises, an author should beware lest the actors of the past should appear merely as puppets in his play. Dr. Bramwell is, we are sure, unaware how strongly the impression is produced that views contrary to his own are erroneous and misleading.

LIBRARY TABLE.

Essays on Rural Hygiene. By GEORGE VIVIAN POORE, M.D., F.R.C.P. Lond., Commander of the Dannebrog; Emeritus Professor of Medicine and Clinical Medicine, University College, London; Consulting Physician to University College Hospital. Third edition. London, New York, and Bombay: Longmans, Green, and Co. 1903. Pp. 426. Price 6*s.* 6*d.*—The first edition of this book was published in the year 1893, a second edition was printed in 1894, and in the present volume the work has been arranged "in more orderly form," as the author says, some omissions have been made, and some new matter has been added. The book as now presented should prove of use to all those who live in rural districts and take an intelligent interest in sanitary matters and it will be found to be suggestive and stimulating. Dr. Poore recommends that the general supply of water in London should be given by meter but he does not apparently take into consideration the cost of the general installation of such a system. In speaking of the old water-supplies of London he says the Westbourne has disappeared and calls Bay's Water a stream. The general teaching of the book, as we have had the pleasure of pointing out on previous occasions, is excellent and its chief use is to show that the sanitation of rural districts must be arranged on plans entirely different from those suitable for towns. Dr. Poore has had considerable practical experience of dealing with human excrement in the country and he is evidently well pleased with the results which he has obtained. He gives, facing the title page.

the reproduction of a photograph of "some results of rural hygiene," which have assumed the material forms of gigantic cabbages and other vegetables. These are from a garden situated in a country town in Hampshire and the author in one of his essays gives the financial results of the sale of such vegetables. These figures would, we think, be more instructive if, in addition to the credit side, cost of labour and so forth were given. A full statement of expenses and profits would make this part of the book most useful.

The Medical Examination for Life Assurance, with Remarks on the Selection of an Office. By F. DE HAVILLAND HALL, M.D., F.R.C.P. Lond., President of the Medical Society of London, Physician to the Westminster Hospital, Physician to the Rock Life Assurance Company. Third edition, greatly enlarged. Bristol: John Wright and Co. 1903. Pp. 112. Price 4s.—This little volume will be found of great value to those practitioners who are engaged in medical examination for life assurance. Difficult problems often present themselves which the examiner may find it hard to solve. In Dr. Hall's book many of these are discussed and information is given as to the course which may be adopted in dealing with sub-standard lives. There is a tendency at the present time perhaps to underrate the importance of heredity in certain diseases, particularly in the case of pulmonary tuberculosis. The discovery of the tubercle bacillus and the consequent infectious nature of the disease has certainly necessitated a reconsideration of the whole question, but we think there is a danger that the pendulum may swing too far. Possible exposure to infection, as in the case of a brother or sister dying from pulmonary tuberculosis, is, in the opinion of most physicians, of greater import than the death of one parent many years previously to the applicant presenting himself for examination. Dr. Hall is of opinion, however, that given a family history of pulmonary tuberculosis, if the applicant has a well-formed chest, with a weight above the average and has the appearance of robust health, then the life may be accepted at ordinary rates, but if contrary conditions are found then an addition to age will probably be demanded. We also agree with Dr. Hall that too much stress in the past has been laid on the age of the applicant as a factor in deciding whether a family history of tuberculosis should have weight. Statistics show that the death-rate per 1000 from consumption is fairly equal throughout life and that there is no limit as regards age to a person contracting the disease. Interesting observations are also made on the heredity of cancer, diabetes, gout, rheumatism, and insanity. As might have been expected, the attention which has of late years been devoted to the recognition and treatment of appendicitis has been reflected in life assurance. Dr. Hall considers that an applicant who has had a single definite attack which yielded to medical treatment might be accepted after three years' immunity. We believe this period of time to be too short and would suggest that there should be at least five years' immunity. With regard to the vexed question of "functional albuminuria" in regard to life assurance Dr. Hall wisely remarks, "At the present time sufficient data have not been collected upon which to found any definite conclusions." The observations which have been made on individuals who have manifested this phenomenon are of comparatively recent date and the after-history of those subject to this condition has yet to be ascertained. We can recommend a perusal of the work to all who are interested in the subject of life assurance.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. With Lithographic Plates and Engravings on Wood. London: J. and A. Churchill. Vol. XLVII., Part III. December, 1903. Price 10s.—The memoirs contained in this part are: 1. On the Anatomy and Development of Distomum Cirrigerum v. Baer, by Ernest Warren, D.Sc., of University College, London, with three plates. The encysted and adult trematode was found in abundance in the muscles of a cray-fish which was, it is believed, of continental and probably of German origin. Full and interesting details are given of the distoma at different stages of development so far as, in this specimen, they presented themselves for examination. 2. Studies in the Retina: the Continuity of the Nerves through the Vertebrate Retina, with three plates, by H. M. Bernard, M.A. Cantab. This is the sixth and final part containing the researches of Mr. Bernard on this subject. The preceding five parts are contained in previous volumes of the journal. He is not in accord with the statements made by Ramon y Cajal, and now very generally accepted, to the effect "that there are interruptions in the continuity of the cells and their processes in the several layers of the retina." He describes the "ganglionic cells" of the retina as the innermost layer of the retinal nuclei which may or may not have a certain quantity of associated cytoplasm and he denies the existence of the diagrammatic axis cylinder process given off, or supposed to be given off, by these cells. He denies also the existence of the "bipolar radially arranged ganglion cells" of the middle layers. He admits the presence of an intranuclear framework of extremely fine fibres, some of which pass from one nucleus to another, establishing intercommunication between them. These fundamental filaments are exquisitely delicate and achromatic. They are capable of conducting nerve stimuli, they are contractile, they can grow, and they can move freely upon one another. They differ from the uniting threads of adjoining nuclei which are short and thick. He terms the plexus of filaments the "protomitomic reticulum." The filaments of the reticulum are associated with chromatin, with a clear fluid matter, with granular cytoplasm, and with the glossy clear threads of the syncytial framework. 3. The Bionomics of Convoluta Roscoffensis, with special reference to its Green Cells, by F. W. Gamble, D.Sc., of Owens College, Manchester, and Frederick Keeble, M.A., of University College, Reading, with two plates. The animal here referred to is a green acœlous turbellarian peculiar to Brittany. The movements of the colonies of these animals and the causes of those movements are interestingly described. The green colour is due to the presence of cells in the body of the animal; and infection or invasion of the green cells, if it occurs, is by a colourless cell. 4. Trypanosoma in Birds in India, by W. Hanna, M.B., of Liverpool, with a plate. The birds mentioned by the author of this article are pigeons and crows. The trypanosoma is interesting as being found in the blood of patients suffering from sleeping sickness. 5. On the Modification of the Eye Peduncles in Crabs of the Genus Cymonomus, by E. Ray Lankester, F.R.S., with two plates.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXX., Nos. 3 and 4. London: C. J. Clay and Sons. Dec. 14th, 1903. Price 10s.—The articles contained in this volume are as follows:—1. By J. N. Langley, on the Sympathetic System of Birds and on the Muscles which move the Feathers, with 13 figures in the text. The author of the paper finds that some of the muscles attached to the feathers in birds are definitely erector and some are definitely depressor muscles; both consist of unstriated muscle and their arrangement is complex. He finds also that the spinal sympathetic fibres arise from a restricted region of the spinal cord lying between and slightly overlapping the regions of origin of the nerves to the limbs. The areas supplied by the sympathetic fibres in

successive cutaneous branches only slightly overlap. The disposition of the muscular fasciculi is given. 2. By H. D. Dakin, 1851 Exhibition Research Scholar, the Hydrolysis of Optically Inactive Esters by Means of Enzymes. Part I., the Action of Lipase upon Esters of Mandelic Acid; the Resolution of Inactive Mandelic Acid, with four figures in the text. 3. By J. W. Scott-Macfie, on the Question of Direct Action of Tissue Extracts of Protoplasm. The author gives the results of his experiments on the action of the extracts of the adrenals, pituitary body, ovary, brain, thymus, and other organs on the embryonic heart, on the movements of leucocytes and on cilia. Little or no action was observed. 4. By John Malcolm, on the Influence of Pituitary Gland Substance on Metabolism. 5. By Sydney W. Cole, Contributions to our Knowledge of the Action of Enzymes. Part 2, the Influence of Electrolysis on the Action of Invertin. 6. By H. K. Anderson, M.D., Fellow of Gonville and Caius College, the Paralysis of Involuntary Muscle, with Special Reference to the Occurrence of Paradoxical Contraction. This article deals with the subject of paradoxical dilatation of the pupil and other ocular phenomena caused by lesions of the cervical sympathetic tract, with two figures in the text. 7. By Sydney W. Cole, on Certain Colour Reactions of Proteid due to Tryptophane. 8. By David Fraser Harris, M.D. Lond., on the Hæmoglobinometry and Hæmacytometry of the Blood of the Skate. The proportion of red to white corpuscles is about 12 to one and there are about 10,000 corpuscles to the cubic millimetre in this fish. 9. By Alexander O. M. Fehrsen, M.B., the Hæmoglobin and Corpuscular Content of the Blood of the Newborn. Dr. Fehrsen finds the blood of the newly born has a high percentage of hæmoglobin, a mean of 6,000,000 or a little more of erythrocytes, a well-marked leucocytosis of 18,000 per cubic millimetre, and an invariable presence of nucleated red blood corpuscles up to the third hour after birth. 10. By H. M. Vernon, M.D. Oxon., the Peptone-splitting Ferments of the Pancreas and Intestine. 11. By A. E. Boycott, M.B. Oxon., on the Number of Nodes of Ranvier in Different Stages of the Growth of Nerve Fibres in the Frog, with two figures in the text. The volume concludes with the Proceedings of the Physiological Society.

Analytical Records
FROM
THE LANCET LABORATORY.

(1) "TABLOID" ANTIFEBRIN COMPOUND; (2) TABLOID HYDRARG. PERCHLOR. ET POTASSII IODIDI; AND (3) "SOLOID" HEMISINE.

(BURROUGHS, WELLCOME, AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

1. THE tabloid antifebrin compound embodies an admittedly useful formula for neuralgic affections. Each tabloid contains two grains of acetanilide, one grain of caffeine citrate, and one grain of camphor monobromide. This combination is also stated to be valuable in obstinate cases of vomiting and in sea-sickness. Camphor monobromide is an excellent adjunct in a formula of this description. 2. The tabloid containing one thirty-second of a grain of perchloride of mercury and two and a half grains of iodide of potassium has been prepared in order to supply a convenient means of administering mercury at regular intervals and in small doses. Tabloids containing twice the amount of each of these drugs have been procurable for some time. As illustrating the accuracy of dosage of the tabloid products in general we may add that on analysis we found exactly the amount of drugs respectively represented. 3. Hemisine is the name given to a soloid which contains the principle of the suprarenal gland. This soloid will be found very useful for the hæmostatic and anæsthetic action of its constituent in local applications.

SPECIAL SCOTCH WHISKY.

(FINDLATER, MACKIE, TODD, AND CO., LONDON BRIDGE, S.E.)

This is a spirit of pale colour possessing only a slight flavour of malt. On analysis it yielded the following results: extractives, 0·09 per cent.; mineral matter, 0·02 per cent.; and alcohol, by weight 41·30 per cent., by volume 48·75 per cent., equal to proof spirit 85·43 per cent. As regards secondary products the following were the results expressed in grammes per 100 litres of absolute alcohol present: acidity reckoned as acetic acid, 12·30; aldehydes, 10·25; furfurol, 0·51; ethers reckoned as ethyl acetate, 5·33; and higher alcohols, 102·50. We do not hesitate to say that according to these results the bulk of this spirit consists of grain alcohol and that little of it is derived from barley malt. This is clear from the fact that the furfurol exists in only very small amount while the ethers and higher alcohols are relatively low. The whisky, however, has evidently been matured in sherry casks, judging from the amount of fixed acidity. Whilst these figures show a very large proportion of grain spirit there is no doubt that the whisky is free from those objectionable products which are removed by age. There is very little malt flavour in the spirit.

STERILISED CREAM.

(FUSSELL AND CO., 4, MONUMENT-STREET, LONDON, E.C.)

When submitted to analysis this cream gave the following results: milk fat, 29·45 per cent.; sugar and proteids, 7·50 per cent.; mineral matter, 0·51 per cent.; and water, 62·54 per cent. It contained no preservatives and keeps in the tin satisfactorily. The flavour is that of fresh cream, for it is practically free from that peculiar taste which sterilisation by heat commonly produces. This cream satisfies critical examination as regards taste, analysis, and preservation.

PHYSIOLOGICALLY PURE SALICYLIC ACID PREPARATIONS.

(R. W. GREEFF AND CO., 20, EASTCHEAP, LONDON, E.C.)

It has long been recognised that preparations of salicylic acid should be physiologically pure—that is to say, should not contain impurities which by reason of their toxic action render the preparations unsuitable for medical use. The introduction of the artificial acid made by acting on phenol with carbonic acid early sufficed to show that there were certain toxic phenol derivatives present which gave rise to objectionable physiological effects. This objection to the artificial acid has been removed by greater attention being paid to the processes of purification. We have received from the above firm four preparations which have been prepared with the utmost care so as to exclude all impurities. The physiological action of the product is thus due to pure salicylic acid itself. The preparations are salicylic acid powder and crystals and salicylate of soda also in powder and crystals. All these preparations respond favourably to laboratory tests. They are perfectly clean and well crystallised. In prescribing salicylic acid and its compounds only preparations of the degree of purity thus indicated should be employed. We have also received a sample of salol from the same makers which also gives evidence of perfectly pure materials having been used and of a process having been employed which yields a pure, clean product. These fine drugs are prepared by the Société Chimique des Usines du Rhône at St. Fons, near Lyons.

MAXIM ALE.

(C. VAUX AND SONS, THE BREWERY, SUNDERLAND.)

The analysis of this beer was as follows: alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent.; extractives, 5·01 per cent.; mineral matter, 0·22 per cent.; and sugar malt, 1·99 per cent. The beer was in sound condition and contained only a minimum of acidity. It appears to come midway

between stout and light ale. The beer is somewhat "dry" to the taste owing probably to the relatively small amount of sugar which it contains; the deficiency is made up by a notable proportion of dextrin. The colour of the beer resembles that of brown Munich beer. As it is only mildly bittered this beer would be more dietetically suitable for some individuals than heavy stout or ale.

(1) HOPOGAN; AND (2) EKTOGAN.

(THE BRITISH DRUGGISTS, LIMITED, 86, CLERKENWELL-ROAD, LONDON, E.C.)

Hopogan represents a peroxide suitable for internal administration and ektogan one for external use. The former contains peroxide of magnesium and the latter peroxide of zinc. According to our analysis hopogan contains 14·60 per cent. of magnesium peroxide, which is equivalent to 4·17 per cent. of available oxygen. Ektogan according to our analysis contains 41·40 per cent. of zinc peroxide which is equivalent to 7 per cent. of active oxygen. It is suggested that magnesium dioxide is useful in cases of deficient oxidation of the blood, while the fact that by interacting with the gastric juice peroxide of hydrogen is developed would suggest that fermentation of the gastric contents might be arrested. Clinical cases are cited in support of the favourable action of hopogan in these respects. Zinc peroxide is similarly regarded as an excellent antiseptic application in dermatological practice and in the treatment of wounds. Both preparations are of a very interesting kind and worthy the attention of our readers.

ROYAL DOUBLE CREAM CHEDDAR CHEESE.

(THE SOMERSET, DORSET, AND DEVON DAIRY CO., LIMITED, CHARD, SOMERSET.)

Our analysis of this cheese was as follows: moisture, 35·24 per cent.; mineral matter, 3·84 per cent.; fat, 38·85 per cent.; and proteid, 22·07 per cent. The cheese has an excellent and attractive flavour recalling that which has made real English cheddar famous. Nowadays the fact that a cheese is made entirely from milk is something for which to be grateful.

VOICE PASTILLES.

(BARKER AND DOBSON, FRANKLIN-PLACE, WHITEFIELD-ROAD, LIVERPOOL.)

We have examined these pastilles and find that the materials employed are of satisfactory quality. The pastilles are demulcent and antiseptic. They have a soothing effect. They are useful for relieving sore and irritable conditions of the throat. The formula is an excellent one.

COCOA ESSENCE.†

(CLEEVE BROTHERS, 22, SIR THOMAS-STREET, LIVERPOOL.)

This is a pure unsophisticated cocoa containing, according to our analysis, 30·80 per cent. of the fat of the nib. The mineral matter amounted to 5·40 per cent., which showed an alkalinity expressed in terms of potash of 1·20 per cent. The moisture amounted to 5·90 per cent. This cocoa is of very good quality and gives a satisfactorily uniform decoction.

(1) BIEDERT'S MILK FOR INFANTS ("CREAM MIXTURE"); AND (2) BIEDERT'S SOMATOSE MILK FOR INFANTS AND INVALIDS.

(A. PRINZEN AND CO., SOETERMEER, HOLLAND. AGENCY: MESSRS. BURGONS, LIMITED, INDIA BUILDINGS, AKERS-STREET, MANCHESTER.)

1. According to our analysis the cream mixture gave the following results: moisture, 31·20 per cent.; mineral matter, 1·70 per cent.; proteids, 16·75 per cent.; fat, 13·71 per cent.; and milk sugar, 36·64 per cent. The preparation is thus seen to be not lacking in any particular element for the purpose of infant feeding. On diluting suitably with water a preparation may be obtained approximately representing the composition of mother's milk, for which it seems to be an excellent substitute according to the testimony of a number of German physicians. The food is retained well in many cases in which cow's milk is inadmissible. It is sterilised and keeps satisfactorily in the tin. 2. Somatose milk gave the following results on analysis: moisture, 33·39 per cent.; mineral matter, 1·58 per cent.; proteid, 14·99 per cent.; fat, 18·71 per cent.; and milk sugar, 31·33 per cent. As a preparation for infants and invalids this food has the advantage of containing a soluble and easily assimilable proteid. For use it is to be diluted with water in the same way as the previous preparation. Somatose milk is also sterilised in the tin but on exposure to air a discolouration set in probably owing to the interaction of the somatose. This detracts somewhat from the preparation unless it is used immediately after the tin has been opened.

HETRALINE.

(CHARLES ZIMMERMANN AND CO., 9 AND 10, ST. MARY-AT-HILL, LONDON, E.C.)

Hetraline is described as a new derivative of hexamethylene-tetramine which in its action is similar to urotropine and helmetol when employed in the treatment of gonorrhœa. It is stated that in daily doses of from one and a half to two grammes, given after meals, this drug is well borne by the gastro-intestinal tract and the urinary passages and that in acute gonorrhœa the pain and strangury disappear and the urine becomes clear.

PURE GRANULATED CHOCOLATE.

(J. J. PROVOYEUR, GAND, BELGIUM, AND HOWELL BROS. AND CO., 80, LOMBARD-STREET, LONDON, E.C.)

Chocolate in a fine granulated form is somewhat of a novelty. In the preparation above described the granulation and dryness are evidently effected by employing a somewhat large proportion of cane sugar. In our opinion the chocolate is too sweet owing to this excess of sugar. A cup of chocolate may be very quickly prepared from this granulated powder. According to our analysis the powder contained: moisture, 2·40 per cent.; mineral matter, 1·40 per cent.; fat, 21·60 per cent.; sugar, 66·89 per cent.; and cocoa principals, 7·71 per cent. The chocolate is manufactured without any addition of alkali, as shown by an examination of the mineral matter. The cocoa flavour is decidedly good.

INDIA PALE ALE.

(WARRICKS AND RICHARDSONS, LIMITED, THE BREWERY, NEWARK-ON-TRENT.)

Our analysis of this beer was as follows: alcohol, by weight 6·57 per cent., by volume 8·18 per cent, equal to proof spirit 14·35 per cent.; extractives, 4·03 per cent.; and mineral matter, 0·26 per cent. The beer was sound and free from undue acidity. Though "full bodied" it is not heavy but refreshing and without that tendency to produce drowsiness to the same degree as do the heavier kinds of malt liquor. It is stated that care is taken so far as possible to suppress the development of higher alcohols during the fermentation.

PAUTAUBERGE'S SOLUTION.

(L. PAUTAUBERGE, PARIS, AND WILCOX, JOZEAU, AND CO., 49, HAYMARKET, LONDON, S.W.)

Each tablespoonful of this preparation is stated to contain ten centigrammes of pure beechwood creasote and 50 centigrammes of hydrochloro-phosphate of lime. The combination of the hydrochloro-phosphate of lime with the creasote is regarded as rendering the creasote better tolerated than when it is exhibited in the ordinary manner. This solution is said not to irritate the gastric mucous membrane and to have been used with favourable results in the treatment of tuberculosis. We have confirmed the presence and amount of the medicinal agents indicated.

(1) B.B. SMOKING MIXTURE; AND (2) LUMLEY MIXTURE.

(BARTLET AND BICKLEY, 17, BROOK-STREET, BOND-STREET, LONDON, W.)

Both these tobacco mixtures gave no evidence on examination of objectionable manipulation. The aroma and flavour are due entirely to pure tobacco; no foreign scent has been added. The proportion of the kinds of tobaccos used is such that the smoke yielded is cool and pleasantly aromatic.

THE LANCET.

LONDON: SATURDAY, JANUARY 2, 1904.

The Public and the Medical Profession.

THE beginning of the year is naturally made a season for moralising and we claim indulgence for a few words of serious reflection upon the relations now existing between the public and the medical profession. Each New Year's day is a milestone at which we pause, now to look back on the road already covered and now to look forward at the track stretching ahead. Instinctively we try to presume the future from the experiences of the past. Part of such a necessary review of the position of things medical we have already presented to our readers, for in the Annus Medicus, published in the last number of the old year, will be found a summary of the medical events of that year as they have been recorded, collated, or commented upon in our columns. It remains to surmise what are the directions in which medical advances may be expected during 1904, while assuring our readers that no efforts will be spared on our part to assist the cause of progress. It is particularly desirable that we should be able to anticipate in thought the more important medical and professional tendencies, for, as we have frequently insisted, the work of THE LANCET is essentially coöperative. We can only give to our readers the latest medical learning and the most practical professional information if we, in our turn, are helped by our readers. All editorial efforts would be futile if we did not find among our public many willing and happy to communicate through us with their professional brethren, thus rendering our pages a bureau for the collection and redistribution of knowledge. It is valuable, therefore, that our many collaborators should know the directions in which useful developments, whether scientific or professional, may be looked for. It is generally impossible to say that any one pathological fact contains a more useful lesson than another, or that one question in medical ethics has a deeper sociological significance than another; and it is not in any such manner that we would attempt to prophesy what new theories or what illuminating deductions may be awaited. But it is not impossible to indicate what are the prevalent conditions of scientific research or how the cause of the medical man, as a professional man, can best be served.

We think that the most noteworthy sign of the times in regard to medicine is the enormous interest that is taken by the public in affairs that were wont at one time to be regarded as purely medical. This is the particular difference to be observed nowadays both in the discussion of purely scientific questions and in the consideration of medical politics; and everything points to the fact that the fusion of medical and public interests will become closer during the succeeding years. A sanatorium for the prevention and curative treatment of consumption is rising under the direct eye of HIS MAJESTY the KING, paid for by a layman, and constructed in accordance with the choice and directions of a committee which is partly composed of laymen and in the hands of which the management will later be vested. Yet medicine is adequately—the public might even think preponderatingly—represented at every step of the proceedings. Research work into the origin of cancer is being busily pursued with funds largely subscribed by the public, and if the bulk of the investigations naturally falls to pathologists the help of all scientific students is freely demanded and acknowledged. It must be observed, too, that the funds are being subscribed not by an ignorant public who think that a certain sum of money being paid certain results must automatically follow, but by a thoroughly intelligent public, again with the KING as the dominant spirit, who have grasped the point that definite knowledge must not be expected too soon, or indeed at any fixed period, from such labours as those undertaken by the workers in the pathology of cancer. No one knows in which direction a profitable start may be made for such investigations, and here it is well to say that great issues must not be attributed to the fact that certain carcinomata, and new growths which have been very generally classed as carcinomata, exhibit retrogression under treatment with radium or the x rays. The progress in therapeutics thus implied is most important, and undoubtedly during the year now begun medical practitioners will mutiply their observations and experiments along this line; but the public ought to understand from them that many of the claims made for the treatment of cancer by the x rays and by radium are as yet unproved. That certain cases have derived benefit is sure, and just so sure is it that no general therapeutic law has been revealed for the remedy of cancer. We need hardly multiply instances to prove that the public at large are aroused to a sense of the responsibilities of medicine and of the debt that is owed to our profession. Contributions to the hospitals on a scale of munificence which grows steadily higher are chronicled week by week; the daily papers are full of correspondence showing an almost embarrassing interest in the affairs of the same institutions; tropical medicine is recognised as an adjuvant to Imperial expansion, and hygiene is now steadily preached from pulpits. The ignominious end to an eccentric onslaught made by the National Antivivisection Society upon the work of certain physiologists showed the sensible public to be ranged as one man on the side of the cause of true medicine. It is unnecessary to say more to show that in 1904 the medical profession in this country will be carrying on their work in an environment which, despite occasional appearances, will be favourable to the growth of medical science.

The lesson from all this we take to be that the medical profession would often be well advised to invite the public more into their confidence. This country has, during the past quarter of a century, been transformed by education, so that the public are able to appreciate the reasons for scientific proceedings in a way which they could not have possibly done in the days of our fathers. Much

medical research is the pursuit along specialised lines of general scientific procedure; many therapeutic measures are but a particular application of a common knowledge of chemistry or some ancillary science. When there were but three learned professions, and when a large proportion of the public was completely illiterate, no good purpose was served by any attempt on the part of the medical man to explain his actions. No member of the laity would have understood the elements of what he proposed to talk about. But now that medicine touches the borders, or passes over into the territory, of so many other sciences, and now that none of the public can be called completely illiterate, while a large proportion of them enjoy as good education as the average medical man, there is no need for the medical man to feel that he cannot discuss a professional topic with a layman. We are not advocating the publication by medical men of popular views on disease in the daily press—such unprofessional action is open to grave abuses and occasionally does serious harm. But we are suggesting that medical men should be quick to seize on this assistance of laymen, which events prove can be obtained if it is intelligently sought. The sympathy of the public need not be expressed only by the support of large educational schemes or the erection of splendid buildings. The payment of medical men for the discharge of State or municipal duties, the fees of medical witnesses and public vaccinators, the position of medical men working for provident institutions—we quote these as a few examples—are subjects in which our profession and the public have equal interests. On the surface these interests may be opposed, but frank discussion between intelligent men would soon show on which side justice lay. It is this *entente cordiale* that we would urge our readers to cultivate during the year now opening.

Plague Research in India.

IN all schemes for the improvement of the public health, and especially for the prevention of epidemic disease, there can be little success unless the general population coöperates with the sanitary authorities. A convincing proof of this is to be found in the behaviour of plague in Asia and Europe respectively, for in India and China it has caused an enormous annual loss of life for the last seven or eight years, whereas in European maritime countries the landing of plague patients from vessels coming from Indian ports has never been followed by any considerable extension of the disease. Differences of climate do not account for this recent immunity of the western nations, for all regions of Europe except the most northerly have been the scene of devastating epidemics at intervals during the last 600 years. In Europe, however, the idea has always been held that protection was to be obtained by interposing some barrier between the sick and the healthy. In former times it was hoped that this could be accomplished by rigorous quarantine and by military cordons round infected towns; many persons also, where circumstances permitted it, deserted their homes at the first alarm of plague and lived elsewhere till the danger was past. In modern times the underlying idea is the same but the method of applying it is so much improved that for practical purposes the old routine of quarantine has ceased. The whole question has passed into the hands of the medical profession who rely, for the safeguarding of the public, on early diagnosis of the disease and prompt removal of the patient from his home to an isolation hospital. At the same time the place which he has occupied is disinfected and all persons who have been exposed to infection are kept under constant observation until the period of incubation of the disease has expired. In India this system fails entirely, for the apathy of the population and their dislike of European interference lead to wholesale concealment of the presence of the disease and to murderous attacks on the sanitary officials with occasional rioting on the removal of a patient to a hospital. Dr. YERSIN, as is well known, established the fact that an attack of plague is due to invasion by a specific bacillus, the microscopic recognition of which either in the actual patient or after cultivation or inoculation forms the basis of the modern diagnosis of the disease. There are, in fact, only a few other diseases the presence or absence of which can be determined with similar rapidity and precision. Much, however, still remains to be done in explaining the etiology of plague and some printed reports which have reached us show that Dr. J. A. TURNER, executive health officer of Bombay, has been recommending that competent bacteriologists should be encouraged to study the relation of plague outside the body to the organism which is associated with the disease in its clinical aspect. The frequent occurrence of plague in the lower animals shows that the human subject is not the only host of the specific bacillus, and Dr. TURNER believes, no doubt with perfect correctness, that light might be thrown, by investigation in this direction, upon the prevalence of plague in India. Dr. TURNER'S suggestions, made to the municipality of Bombay, were eventually submitted to the Governor of the Presidency, who approved of them so far that in the beginning of November certain appointments for the purpose of facilitating the proposed research were announced, but since that time nothing seems to have been done. Considering that hitherto all attempts to check the disease in India have yielded almost no result it is obvious that every effort of whatever kind should be made to throw more light on the pathology and propagation of plague. But the serious question of inducing the population to acquiesce in sanitary precautions will still remain, and for this dilemma there would seem to be no remedy.

The Functions of the General Medical Council.

NOTWITHSTANDING much that has been written and printed at various times with regard to the powers, the duties, and the responsibilities of the General Medical Council, we frequently receive evidence that these are not so correctly understood in the profession as they should be. Letters often reach us describing possibly some serious abuse or some crying evil and indignantly inquiring why the Council permits this, that, or the other subject of complaint, or why the Council does not put a stop to the conduct, of whatever nature, that is impugned. A letter

of this sort, under the title that appears above this article, will be found on page 55; and as we fully believe the writer's statement that his mental attitude is that of many other medical men we think it will be useful exactly to define, not for the first time, what are the functions of the General Medical Council. Generally speaking—and it is the case in regard to the subject of "M.D. Cantab.'s" letter—the Council has no more power in the matter complained of than the complainants themselves, who frequently appear to think of it very much as the average Frenchman was once supposed to think of the "Lor' Maire." Its actual authority is derived from a small number of very simple enactments and does not extend beyond their purview. It is authorised to keep a medical register, intended to enable the public to distinguish "qualified from unqualified practitioners," and containing the names of all persons who are legally qualified medical practitioners and who, by virtue of their registration, are entitled to recover their professional charges in a court of law, to give valid medical certificates, to appear as medical witnesses, and to hold various offices or appointments. It has no discretion with regard to registration, but is bound to insert the names of all applicants who are provided with one or more of the diplomas or licences specified in the Medical Acts. It is authorised to remove from the Register, and thus to deprive of the above-mentioned legal privileges as practitioners, any persons who are convicted of crime or misdemeancur, or who may be adjudged by the Council itself, after due inquiry, to have been guilty of "infamous conduct in any professional respect." It is authorised to require from any of the licensing bodies information with regard to the courses of study and examinations to be gone through in order to obtain their respective registrable qualifications, to visit and to inspect the examinations, and in the event of considering the courses of study and the examinations insufficient to secure the possession by the persons obtaining the qualifications of sufficient knowledge and skill for the efficient practice of their profession, to "represent the same" to the Privy Council, which is then empowered to take such action as may be necessary. The Council is also authorised to make representations to the Privy Council on one or two other comparatively unimportant matters and to prepare and to publish a Pharmacopœia. In these few sentences the whole of its actual powers are described, but it has frequently been called upon as a medical body established by Act of Parliament to advise Government departments with reference to intended legislation. It was thus called upon in relation to the Midwives Act and was compelled to hold long and expensive meetings in order to reply to inquiries which were addressed to it by the Privy Council. In other words, the Privy Council obtained from it a good deal of gratuitous medical advice, the cost of affording which was defrayed from the fees paid by practitioners for registration. As these fees would come from the pockets either of the newly qualified men or from those of their parents, it may be said that the work of medically advising the Government has been entirely paid for by the medical profession—an arrangement which seems hardly consonant with what lawyers would describe as "natural justice."

The disciplinary powers of the Council with regard to the conduct of medical practitioners are both less extensive and less elastic than those of the Royal Colleges; and having been designed only for the protection of the public, are of very slight avail for the protection of the profession. The legislature evidently contemplated the possibility of conduct on the part of a practitioner which might be insufficient to bring him within the grasp of the criminal law, and yet sufficient to show his absolute unfitness to be trusted with professional opportunities and responsibilities. The Council was empowered to erase the name of such a person from the Register—that is to say, to deprive him absolutely and permanently of any legalised medical status or of any power of legally earning his living as a medical practitioner. No power of restoration to the Register was conferred. The result was, of course, that the Council shrank from taking the extreme step of erasure in any but very gross cases, and that others were left practically unpunished; while some of those whose names were erased appealed to the Courts and obtained judicial decisions as to the way in which the words "infamous conduct" should be interpreted. In 1862 the Council was made a corporation by a separate Act of Parliament, and thereafter, taking advantage of the general power of a corporation to review or to rescind its own decisions, it commenced the practice of restoring to the Register, after a certain period, names which had been erased from it. In this manner it obtained and exercised what is practically a power of suspension from professional privileges, although it is very doubtful whether the restorations thus effected would be sustained by the courts if the question were tried. A still further modification of procedure, with a great consequent increase in the power of the Council to deal with minor cases of professional misconduct, was suggested by Mr. BRUDENELL CARTER who obtained the passage of by-laws under which the Council, after hearing a charge and the defence, became able to postpone its verdict upon the case to a future session. It stopped short of pronouncing the proved conduct to be "infamous," a pronouncement which would have necessitated removal from the Register, and said to the defendant that he would do well to reconsider his course of action, and to come before the Council again in a position to show that he had abandoned it. In this way a moral suasion in excess of the statutory power was exerted; and many men who could not have been removed from the Register without great risk of the decision being reversed by the King's Bench were induced to abandon objectionable courses, such, for example, as the holding of undesirable appointments under touting benefit societies. In these two directions therefore the Council may be said to have strained its powers for the protection of the profession, but it still has no means at all of dealing with ethical questions as opposed to absolute misconduct. The Royal Colleges, on the other hand, have great powers if they choose to exert them, and it is to them rather than to the Council that the profession should look for the regulation of conduct in comparatively minor matters. The Colleges are able to withdraw their diplomas for any cause which they may consider sufficient, and their decisions are neither subject to the review of any other

tribunal nor hampered by phrases such as "infamous conduct," which require to be technically interpreted by legal decisions.

It will be seen from this summary of the important but limited functions of the General Medical Council that the Council was established entirely for the protection of the public and that, instead of having been supine in the matter of protecting the profession, it has actually gained some limited power in this direction by means which may almost be described as a straining of its statutory authority. It has no mandate or powers whatever to prevent the evils of quackery to which "M.D. Cantab." alludes. In relation to the licensing corporations and to their requirements from candidates for qualifications it is almost, if not altogether, powerless. It has the right to visit and to inspect their examinations, but, if it is not satisfied, all it can do is to report "insufficiency" to the Privy Council, and the Privy Council would then hear the case and decide upon it, according to its lights. The corporations, if their actions were impugned, would, of course, defend themselves; and the practical result would be a trial, with a conflict of expert testimony, after hearing which a few lawyers would be called upon to give a binding decision upon medical questions concerning which they would be profoundly ignorant. Whether such a decision were in favour of the Council or of the corporations it could hardly fail to be derogatory to the dignity and prejudicial to the interests of medicine, and it may well be hoped that no occasion will arise for its being pronounced. The corporations may be expected to recognise before long that their own best interests are inseparably bound up with the maintenance of a high professional status and that this can only be effected by the maintenance of a high standard of education.

Annotations.

"Ne quid nimis."

THE IRISH POOR-LAW MEDICAL SERVICE.

THE recent suggestion of Sir Lambert H. Ormsby, President of the Royal College of Surgeons in Ireland, that the medical officers of the Poor-law service should be chosen by competitive examination, although it has been often made before, has raised considerable discussion. Mr. J. S. McArdle, another Dublin surgeon, as reported in THE LANCET of Dec. 12th, 1903, p. 1694, objects to this plan on the grounds that it would interfere with the privileges of local government and that it would be "contrary to the spirit of the age." To this the President of the Irish Medical Association (Dr. L. Kidd of Enniskillen) replies advocating that the service should be made a State one (like the naval and military medical services) and that the Treasury should find the money for the whole of the medical officers' salaries. The present arrangement for the election of Poor law medical officers is a deplorably bad one. They are not now elected on the ground of merit alone, but religion, politics, and acquaintance with the local guardians are the factors that weigh in determining a candidate's selection. In these circumstances is it any wonder that the service is gradually deteriorating, that the able young men of the medical schools refuse to enter it, and that as a natural result the problems of hygienic and preventive medicine (which are more pressing in Ireland than in any other part of the United Kingdom) are totally neglected? The dispensary medical officers are the sanitary authorities of their own districts but if they encounter glaring hygienic defects how can it be expected that they can take action when these conditions are present in the houses or farms of the people who appoint them? Recently at Sligo the Local Government Board inspector reported that he found the houses in which an epidemic was raging "perfectly indescribable with filth" and, as pointed out by Dr. Kidd, these words are unfortunately applicable to many parts of rural Ireland. Mr. McArdle forgets that the Irish Poor-law medical service is to a large extent already a State service, for it is a fact that no medical officer can be appointed or dismissed, no salary can be fixed, raised, or lowered, and no locum-tenent can be employed without the sanction of the Local Government Board. Further, the duties of the medical officers are drawn up by the Local Government Board and not by the guardians and the recommendations of the medical officer, if neglected by the guardians but approved by the Local Government Board, may be executed in spite of the guardians. The Local Government Board has the power, which it has been obliged to exercise on several occasions, of dissolving a recalcitrant board of guardians and of appointing officials of its own to discharge the duties of these guardians. Popular election of medical dispensary officers in Ireland is not a success and it would, in the opinion of many men of experience, be a much better plan and would in the end do away with the present deplorable state of the Poor-law medical service if it were made a State one on exactly the same basis as the medical services of the navy and the army. Entrance would then be by examination, promotion to higher posts, such as medical inspectorships and the like, would be made on evidence of efficiency and there would be superannuation with retirement at the usual age limit (65 years). It is perfectly absurd to speak of such a change being "contrary to the spirit of the age." In Ireland at the present moment, as we have said, religion and politics, not efficiency, determine the election of nine-tenths of the dispensary medical officers of that country. The true "spirit of the age" is to put a stop to such eighteenth century practices and to make efficiency alone the test of the appointment of those who are to attend on the poor, and this we believe can only be brought about by making the Poor-law medical service of Ireland a State one and by freeing it from the present baneful influences which are degrading it to such a level that soon no self-respecting man will enter it.

THE LATE REV. S. A. THOMPSON YATES.

A FEW lines of recognition—he would himself have cared for no more—are due to the memory of the Rev. Samuel Ashton Thompson Yates whose recent death has already been announced in our columns. He was known as a wise and munificent supporter of the interests of medical science but his gifts were for the most part anonymous and no one in all probability is in a position to enumerate them. The exceptions to his general rule of anonymity were his presentation to the University College, Liverpool, of the laboratories known as the "Thompson Yates" Laboratories and his donation of scientific literature to the Medical College of the London Hospital known as the "Thompson Yates" Library. The laboratories at Liverpool for the study of physiology and pathology were erected and supplied with apparatus at a cost of upwards of £30,000. They are unrivalled for their purposes by any laboratories in the United Kingdom and are probably not surpassed by any of the great laboratories of the continent or in America. They were opened in 1898 by Lord Lister, the occasion being made remarkable by the presence of Professor Virchow and a very distinguished gathering of medical men. The

Thompson Yates Library of foreign literature for the use of the Medical College of the London Hospital contains the chief foreign periodicals dealing with anatomy, physiology, and pathology, which were collected at a cost of nearly £1000. "Mr. Thompson Yates," writes a well-informed correspondent, "had a deeply-rooted abhorrence of fashionable philanthropy; his calm and enlightened judgment favoured objects which to common minds were not attractive and popular. He conceived the idea that the scientific side of hospital work was apt to be starved for the charitable side, and with this view he gave to the Medical College of the London Hospital considerable sums of money for the purchase of instruments and apparatus for the departments of physiology, advanced anatomy, embryology, and bacteriology. Within the last few months of his life in the same conviction that specialised knowledge and not sentiment was the need of the age he gave a large sum to promote the teaching of economics to one of the colleges of the University of London. Mr. Thompson Yates lived for some years at Mile-end and acquired a thorough insight into the social and charitable affairs of the district. He was a guardian of the poor, a member of the infirmary committee, and he was also a member of the Asylums Board for six years, during which period the metropolis was visited with two severe epidemics of small-pox. He took an active interest in the Poor-law schools, in the Tower Hamlets Pension Fund, and the East-end Nursing Association. In all that he did, in all that he gave, he was one of those who 'consider' the poor." Our correspondent's just remarks on the useful and unostentatious career of a good man will be read with interest by many of our readers to whom Mr. Thompson Yates was merely known by name as the munificent benefactor of the Liverpool Medical School.

THE PATHOLOGY OF THE BLOOD IN GENERAL PARALYSIS.

THE blood of patients suffering from dementia paralytica has been the subject of microscopic study by many observers for 20 years past but no regular and systematic investigation extending over a considerable portion of the course of the disease is known. A study undertaken with such an object in view was carried out during the past two and a half years by Dr. A. R. Diefendorf, lecturer on psychiatry at the Yale University Medical School, and an account of the results obtained is published in the *American Journal of the Medical Sciences* for December. Passing over the earlier studies on the blood of paretics made by Erlenmeyer (1846), Sutherland (1873), and Voisin (1879) with instruments which did not give results comparable with our own, we come upon the work of MacPhail (1884) who in his study of 15 cases of general paralysis discovered that the hæmoglobin and erythrocytes were relatively low in the first stage of the disease, increased slightly during the quiescent period, and diminished greatly during the final stage. He also found that the leucocytes increased proportionately toward the end of the disease and that states of excitement were associated with changes in the condition of the blood. Further detailed and concordant observations of the hæmoglobin percentages in various stages of the disease were published by Thompson (quoted by MacPhail) and Bevan Lewis (1889). More recent blood examinations of general paralysis have been made by Smyth (40 cases of general paralysis), Winkler (four cases), Kryspiakiewicz (15 cases), Roncoroni (15 cases), Capps (19 cases), and Jelliffe (17 cases) during the period 1890 to 1897 and a number of interesting facts have been ascertained. Dr. Diefendorf's studies were carried out on 11 patients with the following results. The blood examinations were made weekly, at the same time of day, and all the patients were on uniform diet. The erythrocytes and leucocytes were counted with a Thoma-Zeiss hæmocytometer and the hæmoglobin was estimated with a Fleischl's hæmometer. The hæmoglobin in all cases, says Dr. Diefendorf, showed a moderate anæmia which became more marked but never profound—i.e., below 65 per cent.—as the disease advanced. During the terminal stage the percentage of hæmoglobin was from 3 to 20 per cent. higher than that of the stage just preceding. The hæmoglobin during the various paretic states of quiescence, of excitement, and of stupor, not terminal, presented no constant or characteristic change. There was no increase in the percentage of hæmoglobin during the quiescent period when nutrition regularly improved. The erythrocytes in eight cases investigated during a period of many months showed normal proportions which sank to subnormal for a short period just previous to the stage of terminal dementia. In the latter stage the percentage rose again to the normal. This rise "was exactly coincident with the beginning of the terminal state" in five of the ten cases. The various paretic states, exclusive of the terminal state—viz., those of excitement and stupor—failed to exhibit any change in the erythrocytes. As regards the relation between bodily nutrition and the erythrocytes the latter gradually diminished in numbers as the disease progressed and nutrition was impaired, but in the terminal state of dementia, when there was a considerable loss of bodily weight, there was a marked increase in the number of red corpuscles. No appreciable changes could be observed in the erythrocytes at the time of, or immediately after, paralytic attacks. As regards the leucocytes the number and characters of these elements varied irregularly during the early and intermediate stages. But in all cases a rise in the number of leucocytes which amounted to slight or moderate leucocytosis occurred with the onset of terminal dementia. This leucocytosis varied from 10,700 to 27,000. Special states of excitement or stupor, apart from the terminal state, were not associated with any characteristic leucocytic changes. Plasma cells were carefully looked for in the differential counts but were never encountered. This observation is of importance because of the prominent rôle played by these cells in the vascular changes in the brain which have come to be regarded as a pathognomonic condition. The anæmia which occurs in general paralysis is, says Dr. Diefendorf, similar to that which accompanies chronic diseases, as chronic nephritis, cirrhosis of the liver, and syphilis, except that it is less pronounced. It is in accord with the progressive atrophy of the nervous system, accompanied by a gradual and complete loss of function as well as atrophy and arterio-sclerosis of the internal organs. The tendency for this anæmia to disappear and to be replaced in the terminal state by a progressive increase in both red and white corpuscles which in some cases passed the normal limits does not, so far as recorded, find its counterpart in other diseases and is most difficult of explanation. The presence of the leucocytosis accompanying paralytic attacks has already been established by Capps as being in harmony with the toxæmic theory, a view supported by the later studies of Kroubmiller, Pugh, and Diefendorf himself.

MORTUARIES.

IT is well known that many of the metropolitan mortuaries are very far from being what they should be. We have upon many previous occasions, notably in our issues of April 3rd (p. 972) and April 17th (p. 1105), 1897, called attention to the lack of proper mortuary accommodation and also of proper coroners' courts. Only recently Dr. F. J. Waldo, the coroner for the City and for Southwark, has been complaining of the lack of accommodation afforded for the holding of inquests in the latter borough. With regard to mortuaries we are willing to allow that some

boroughs—for instance, Kensington and Chelsea—have properly appointed airy buildings where the dead may rest before burial and where there is also every facility for making post-mortem examinations decently and in order. But other boroughs are not so fortunate and in poor and densely populated parishes there is a natural disinclination on the part of the relatives of the dead to allow the body of one whom they have lost to be taken out of the house until the time for the funeral. We are aware of cases in which corpses have been kept in coffins for some days in rooms about nine feet square which were occupied night and day by four or five persons. This is not conducive to either health or decency and yet we can sympathise with the dislike, foolish though it be, which is felt in sending the body of a relative to the "parish" mortuary, even when this is a decent building. But a mortuary attached to a parish church is a different thing. Here is no question of rates, or of parish relief, or of inquests, but a quiet and restful place where the body may lie until burial. The vicar of St. Matthew's, Westminster, is at present endeavouring to build a mortuary in connexion with his church. The present Westminster mortuary is an unlovely building in the Horseferry-road and is but little used. Anyone who knows how poor are streets such as Great Peter-street will see that there is need for some place where the inhabitants may lay their dead while awaiting burial. However careless in churchgoing is the average Londoner, yet the poorest among them like to be married and buried by "the Church," and we are sure that if the mortuary can be built it will profit the neighbourhood, not only from the point of view of increasing reverence for the dead but from the still more important point of view in one sense, namely, that of preventing infection and of raising the standard of hygiene, for we think there is no doubt that it will be used with gratitude. If any medical men or their patients have any money to spare it will be gratefully received for the building fund by the Rev. W. B. Trevelyan, St. Matthew's Clergy House, Great Peter-street, Westminster.

THE MILK-SUPPLY OF MANCHESTER.

FROM time to time severe statements have appeared in the press as to the Manchester milk-supply. Recently Mr. James Sadler, secretary to the Cheshire Milk Producers' Association, gave an address on the subject at a meeting of the Ancoats Healthy Homes Society. He took, of course, the rôle of counsel for the defendant but gave some interesting facts as to the number of cows—from 15,000 to 20,000—required to supply Manchester and Salford. At present some 1400 cows are kept in the city. It would be better if they were away, for not only is the space occupied by them required for the population, as Mr. Sadler observed, but in the country they are in more natural and healthy surroundings. He objected to a statement by the veterinary inspectors of the Manchester corporation that "the milk trade is in a filthy condition" and also to an article in the *Manchester City News* which certainly does not lack "local colour." It contained the following passage: "Before it reaches the consumer the milk is handled by milkmen with dirty hands and clothes; it stands in hot and dirt-laden shippons. It is exposed to various blends of more or less polluted air and it is perhaps left for hours in unwashed pails at wayside stations, and all the while the bacteria are breeding by the million, spreading scarlet fever, diphtheria, typhoid, and other diseases." Another paper said: "The appalling child mortality that is directly traceable to the consumption of impure milk must be stayed at any cost." Mr. Sadler said that "having an accurate knowledge of the conditions under which milk was produced in Cheshire he could only characterise these statements as gross and mischievous libels." To prove this he stated that, whereas in 1892 and 1893 there were at Bradford in Yorkshire 10 per cent. of adulterated samples and last year only 2 per cent., in Manchester in the same period the adulteration had gone down from 6 to 3 per cent. This, however, does not meet the charges of want of cleanliness in dealing with the milk, and that there is too much ground for them is clear from the dispassionate statements in Dr. J. Niven's last report on the health of Manchester. Too often, no doubt, "the cowsheds are dirty, as are also the flanks and udders of the cows. The milkers do their work with unwashed hands. Insufficient care is taken in cleansing the milk cans and churns." To remedy these defects the sanitary authority sends a carefully drawn up memorandum giving suggestions and advice which would if followed soon raise the milk-supply above reproach. The cows kept in Manchester are in the majority of cases well fed and groomed but the sheds are sometimes overcrowded. Mr. Sadler with some justification blames "the crude and unsuitable arrangements" of the railway companies, and no doubt they might be improved. He also suggests that the health authorities should see that the arrangements for storage in the town are improved. He asks how it is, if the high death-rate of the children is due to the milk, that it is lowest in the districts using most milk and highest where the least is used. Though it is evident that the milk-supply of our large towns—for Manchester may be taken as a fair example—is far from perfect, the closeness with which it is now watched is of good augury for the future. But there is even now far too much apathy not only among the poor but also among the well-to-do. Some time ago an attempt was made to establish a company in Manchester for the supply of pure milk, something after the plan of the Moelke Forsyning Company at Copenhagen, but it failed for want of adequate support. Mr. Sadler's apologia would be more effective if he did not go quite so near to denying that disease is communicated at all by milk and threaten the opposition of the farmers to any further increase of precautionary powers on the part of the authorities. The outbreak of sore-throat at Woking, for example, was distinctly traced by the medical officer to four cows with diseased udders. The truth is that though on many farms every care is taken to insure cleanliness there are a good number where the occupants are in a lower state of civilisation and where they are only clean when compelled to be. At a meeting to be held later Mr. Brittleshaw, the veterinary inspector of the corporation, will treat of the milk-supply from his point of view and his picture may perhaps differ considerably from Mr. Sadler's.

ST. BARTHOLOMEW'S HOSPITAL.

IN THE LANCET of Dec. 19th, p. 1741, we expressed a fear that the governors of this ancient institution had decided too late to ask for more land seeing that the Post Office was in the field against them. Since we wrote thus we learn that the Post Office has practically secured the whole of the remainder of the site of Christ's Hospital. The Post Office, however, will, we suppose, sell a portion of the site if asked to do so, and on Dec. 29th a meeting of the authorities of St. Bartholomew's Hospital was held at which it was determined that a deputation consisting of the treasurer and two almoners should approach the Postmaster-General with a view to obtain some of the recently purchased site. We hope that the deputation will go as men in no doubt of gaining their desires; and, moreover, that they will go prepared with a definite plan of the land which they require. It is no good to approach a Government department in a meek spirit nor under the idea that the asker will not obtain his wish. The Postmaster-General must be told that it is vital to the existence of the hospital

that more land shou'd be handed over to it on a site contiguous to that which it occupies at present, and we earnestly hope that the deputation will lose no chance of impressing this fact upon him. "Ask and it shall be given unto you" is as true now as it was 1900 years ago.

THE MEDICAL DIRECTORY FOR 1904.

THE 1904 issue of Messrs. J. and A. Churchill's Directory appeared with commendable promptitude in the last days of 1903. Among new features is a list of the members of the Central Midwives Board, while the index to the abstract of the principal laws affecting the medical profession has been arranged alphabetically. The total number of names for 1904 is 37,730, being an increase of 439 over the total for 1903. Of departmental increase the provincial English list shows 16,553 names, as against 16,422 in 1903, and the Naval, Military, and Indian Medical Services 3016 names, as against 2917 in 1903. The article which appeared in the Directory for 1903 under the heading of "Medical Staff College, R.A.M.C.," has its place taken by one dealing with the "Royal Army Medical College." The somewhat humorous entries in the useful classified list of books to which we drew attention last year have been modified by the omission of the possessive "s" after the authors' names and therefore in place of "Bland Sutton's Ovaries" or "Murray's Hare Lip" we read "Bland-Sutton—Ovaries" and "Murray—Hare Lip," which is without doubt an improvement. For the rest we can only say that the Directory is as complete and useful in every way as possible and the information contained in the introductory and other articles is kept well up to date.

HELLEBORE POISONING.

A CASE of poisoning by hellebore occurring at Sackville College, East Grinstead, was recently investigated by the East Sussex coroner. Evidence was given to show that John Davis, an aged inmate of the college, by the advice of a friend, prepared an ointment made from helleborus niger in order to allay an irritable skin disease. On the day of his death, being afflicted with pains in the stomach, Davis swallowed what he thought was a liquorice powder but in reality was the powder from which he had prepared his ointment. The two powders were kept in similar papers in a canister and Davis possessed only one eye, whilst the remaining one was affected. He discovered his mistake and proceeded to a druggist's shop in the town with the object of obtaining an emetic. The assistant, who later remarked that Davis's manner was as usual, advised him to consult a medical man at once, but whilst on the way home, and it is believed 20 minutes after he had swallowed the hellebore, he was attacked with great pain and was supported back to the college. Mustard and water proved unavailing as an emetic and all efforts to procure a medical man were fruitless. Davis remained conscious to within ten minutes of the end and died within two hours. The coroner remarked that, whilst admitting the poison was one comparatively unknown, no one appeared to be aware of the seriousness of the case and as Davis had called for a remedy it was the assistant's place to have given it to him. The druggist pointed out that the poison was not included under Schedule 1 or 2 but nevertheless be marked the packet "poison." Mr. James Harrison, M.R.C.S., L.R.C.P. Edin., warden at the college, gave his testimony. He did not see Davis until within seven or eight minutes of his death. In answer to the coroner Mr. Harrison stated that the effects of hellebore were that in the first place intense burning in the stomach ensued and then as absorption took place it naturally paralysed the nerve centre governing the heart, resulting, as in the present instance, in heart failure. Olive oil could be given as an emetic, but at present no antidote was known. A teaspoonful was sufficient to cause the death of six men. The coroner remarked that there was comparatively little known of the poison and the jury returned a verdict of "Death from misadventure." Cases of poisoning by hellebore are undoubtedly rare. The symptoms are very similar to those produced by veratrum and the two poisons may easily be mistaken for one another. Hellebore is strongly irritant to the mucous membranes and has an action on the heart resembling that of digitalis and it also acts on the nervous system. Hence, in overdoses it produces nausea, vomiting, salivation, and diarrhœa. The primary stimulating action upon the motor centres and the heart may not appear and the general depression will then be very marked. The heart's action becomes rapid and feeble and death from syncope is likely to occur. A case of poisoning by hellebore with recovery was recorded in THE LANCET, vol. ii., 1856, p. 100.

DISSEMINATED SCLEROSIS AND ITS ASSOCIATION WITH DEMENTIA.

DISSEMINATED sclerosis of the central nervous system is generally accompanied by slight mental changes. In the larger number of cases these psychical alterations are insignificant and play a minor rôle in the list of symptoms. They may be summed up briefly as follows: mental dulness and apathy varied by mild states of exaltation or melancholic depression of an ephemeral character. Another group of cases with the somatic symptoms of disseminated sclerosis is characterised by a preponderance of the mental symptoms which appear early in the course of the disease, are of unusual severity, and terminate in complete dementia. An account of this latter affection, which seems to have affinities with general paralysis of the insane, is published in the *American Journal of the Medical Sciences* for December by Dr. J. Ramsay Hunt, neurologist to the Cornell University Medical School. The group is represented pathologically by two subdivisions: (1) an extreme development of the sclerotic process in the grey and white matter of the brain (cerebral type of disseminated sclerosis); and (2) a mixed or combined form in which symptoms of multiple sclerosis and general paralysis coexist. Both forms, says Dr. Hunt, are rare, seven cases being recorded in literature to which Dr. Hunt adds an eighth which is as follows. The patient was a woman, aged 53 years, the mother of seven children. There were no miscarriages or evidences of syphilis. Her symptoms began four years previously with progressive weakness in the legs and slight defect of memory. These symptoms grew more marked and on admission to hospital there was marked spastic ataxia of gait with considerable mental enfeeblement. The upper limbs also exhibited ataxia and weakness, the speech was stammering and syllabic, the facial expression was one of stupid hilarity, and there were occasional impulsive attacks of laughter. Ophthalmoscopic examination showed the presence of double optic neuritis passing into atrophy. The patient complained of occipital tenderness and pains in the limbs. Paræsthesiæ ("numbness and tingling") were present in the extremities. Nystagmus was present but the pupils, though small, reacted normally to light and accommodation. The knee-jerks were increased on both sides but the tendon reflexes of the upper extremities were wanting. The sphincters acted normally. Occasionally involuntary ataxic movements of the arms and head occurred. The lower extremities were usually held in a state of semiflexion. The patient's physical condition gradually grew worse and she died at the end of four years' residence in hospital. The necropsy evealed the following conditions. The brain

substance was somewhat atrophied and there was excess of cerebro-spinal fluid. The ventricles were enlarged and the ependyma was granular. Yellowish plaques of sclerosis sharply defined were found scattered throughout the cerebral and cerebellar hemispheres, involving both white and grey matter. Similar plaques were observed in the pons and medulla. The nerve cells of the cortex were extensively atrophied and the neuroglia was increased. In many parts the leptomeninges were thickened and infiltrated with round cells. The cortical arteries were thickened and the perivascular and pericellular spaces dilated and beset with pigment cells and fat granules. By Weigert's method a considerable loss of the radiating and association fibres of the cortex was demonstrated in the frontal, temporal, and occipital lobes. In these areas the tangential fibres were absent. Although the symptoms of disseminated sclerosis were not apparent until the forty-ninth year the cerebro-spinal distribution of the lesions, says Dr. Hunt, and the pathological appearances were identical with the juvenile form of sclerosis, "while the extent, character, and severity of the cortical degenerative process would correspond only to that observed in general paralysis of the insane." The diagnostic difficulties encountered in such cases are considerable. Nystagmus, scanning speech, and intention tremor when typically present will leave no room for doubt as to the presence of disseminated sclerosis, but if epileptiform or apoplectiform attacks occur and there is marked dulness of mind the diagnosis is difficult. The Argyll-Robertson pupil if present will indicate general paralysis, as it is very rare (occurring only in 1 per cent. of cases) in sclerosis. In all the cases personally observed or collected, says Dr. Hunt, a hereditary taint was traceable, with evidences of a defective nervous system in early life (imbecility, weak-mindedness, and in one case epilepsy).

THE POISONOUS CONSTITUENT OF TOBACCO SMOKE.

THE gaseous products of the incomplete combustion of tobacco, whether it be smoked in the pipe, the cigarette, or the cigar, are so complex that the question—to which constituent are the toxic effects of tobacco smoking precisely due—remains unanswered. Of course, it is well known that nicotine is a powerfully poisonous constituent of tobacco leaf but it is by no means certain that the alkaloid reaches the system by way of the smoke in sufficient quantity to act seriously as a poison. To begin with, the amount of nicotine in tobacco is very small—and there is reason for believing that the quantity given in previous analyses has been considerably over-represented—moreover, though a volatile poison, nicotine does not occur in the free state in tobacco but as an organic salt which is not volatile and which probably breaks up readily on combustion. It is doubtful whether a seventh part of the total nicotine in the tobacco reaches the mouth of the smoker and some investigators deny that any nicotine occurs in tobacco smoke at all. But assuming that nicotine is the toxic constituent of smoke the quantity must be quite minute since in most mild tobaccos the proportion is rarely over 1 per cent. On the other hand, the incomplete combustion of tobacco gives rise to the formation of aromatic compounds, oils, bases, amines, and gases, some of which are undoubtedly poisons and these are obviously produced in a far larger amount compared with the quantity of nicotine in tobacco. In this connexion too little attention seems to us to have been paid to the relatively large quantity of the poisonous gas—carbon monoxide—in tobacco smoke. When the insidious nature of this gas is considered its absorption in the system, which must be very rapid when inhalation is practised, would sufficiently explain the train of poisonous symptoms which excessive smoking is apt to set up. In some particulars the physiological action of nicotine and carbon monoxide is similar. The dizziness and stupor, the trembling of the limbs and the hands, the disturbance of the nerve centres and of the circulation, palpitation on a slight effort, and the feeble pulse may be the indications of either carbon monoxide or nicotine poisoning. But since one ounce of tobacco gives no less than one-fifth of a pint of pure carbon monoxide gas when smoked in the form of cigarettes—and probably as much or more in the form of cigars or in pipes—it is not improbable that to a very large extent these symptoms are due to the carbon monoxide. We have recently tried the following instructive experiment which bears upon this point. Two or three mouthfuls of tobacco smoke from a cigarette were shaken up with a few drops of blood diluted with water in a bottle. Almost immediately the blood assumed the pink colour characteristic of blood containing this gas, and further observations with the spectroscope confirmed the presence in the blood of carbon monoxide. Similarly a few mouthfuls of smoke from a pipe and a cigar were tried and the results were even more marked. In this experiment we have some explanation in particular of the evil effects of cigarette smoking, for it is chiefly cigarette smoke that is inhaled—an indulgence by which the poisonous carbon monoxide is introduced directly into the blood. This effect of tobacco smoke upon the blood appears to us to be of considerable significance.

THE NEED FOR CLASSIFICATION OF PAUPERS.

ON several occasions we have called attention to the necessity for improved classification of the inmates of workhouses and have shown how hardly the present system presses upon that small percentage of the poor whose misfortunes are not attributable to their own evil courses. The abhorrence with which respectable paupers regard the institutions professedly designed to minister to their wants is well known and has unfortunately only too substantial a foundation. An article in the December number of the *Nineteenth Century* by Edith Sellers, entitled "Shifting Scenes in Rural Workhouses," fully bears out the contentions maintained in these pages. We select the following examples from those given as illustrations of the abuses still existing. In one workhouse were found, all occupying the same living room and dormitory, 12 men, of whom two were murderers who had served respectively 20 and five years' penal servitude for their crimes, while another was a repulsive lunatic. Another male ward elsewhere contained 13 men, some of them ill but doing their best to get well as soon as possible so that they might escape from the unpleasant propinquity of the two idiots and the dangerous lunatic with bullying tendencies whose society was thrust upon them. The women were in similar evil case. At one small workhouse there were but two, of whom one was imbecile, so that the other found little companionship or sympathy of a desirable kind. The women's ward at another place was terrorised by "a harridan of the worst sort," known as "the Tigress," whose vagaries neither the officials nor the magistrates could or would control. At yet a third workhouse the family party consisted of two imbeciles, two feeble-minded persons, one vicious woman, and one unhappy old lady who, to the detriment of her peace of mind, was none of these things. With scenes like these before their eyes is it any wonder that to the deserving poor the workhouse is an accursed place? For the more striking features of the picture the various boards of guardians and their officials are in great measure responsible. It is an abuse of the powers given under Section 24 of the Lunacy Act, 1890, that lunatics of the class described should be detained in a workhouse. But even where the provisions of the Act are adhered to there

remains much to be done. After eliminating those paupers whose abnormality in the way of vice or mental disorder is sufficiently marked to justify their detention in prisons or lunatic asylums, there remain other well-defined groups whose deserts differ widely although under the present arrangement all share alike in the charity publicly dispensed. An essential condition of any measure of reform is therefore suitable classification. In the larger unions of London and the provinces something is done in this direction by the removal of children and imbeciles to special homes or asylums, the provision of wards for lock cases, the appointment of male nurses to deal with the more ruffianly of the sick, and so on; but where the total number of paupers is small even this degree of separation is impracticable. There should be available for the poor of any district at least one institution between the workhouse on the one hand and the prison or lunatic asylum on the other, and in country places this could only be managed by a fusion of parishes and by using the existing buildings for distinct classes of cases.

SUBSTITUTION UNMASKED BY THE ROMAN LETTER "M."

THERE is a curious provision in the Bread Acts of 1822 and 1836 which are still in force to the effect that "every person who shall make for sale, or sell or expose for sale, any bread made wholly or partially of peas or beans or potatoes, or of any sort of corn or grain other than wheat, shall cause all such bread to be marked with a large Roman 'M.'" It would thus appear that the baker who chooses to put potatoes in his bread could escape the charge of adulteration by marking the loaf with this letter in the manner described, and it would be well occasionally to examine all loaves for this imprint, for it might very easily be unobserved or, if there, might be taken to mean something quite different. The plan seems to us to offer some advantages to the public if they were aware of it and the Roman "M" might be of real help in suppressing the very prevalent fraud of substitution. Thus, if it could be made compulsory to print a Roman "M" on a bottle of whisky which is not all malt, or on a bottle of brandy which is not all grape spirit, or on a fabric which is not all linen, and so forth, the public would know what they were getting and much of the deceit at present practised would be brought to light. The vendors of substitutes could not logically raise any objection to this process because they invariably argue that the substitute is better for the health and comfort of the buyer than is the genuine article.

FIRST FRENCH CONGRESS OF CLIMATOTHERAPY AND HYGIENE OF TOWNS.

A CONGRESS under this complicated name will be held at Nice during Easter, from April 4th to 9th, 1904, under the presidency of Professor Chantemesse. Among the vice-presidents are Professor Renaut (Lyons), Professor Grasset (Montpellier), Professor Calmette (Lille), and Dr. Balestre (Nice). The discussions will bear on the following five questions: (1) the climate of the French Mediterranean coast; (2) adaptation of the individual to climate; (3) influence of the French Mediterranean coast climate on tuberculosis and tuberculous patients; (4) the influence of climate on the French Mediterranean coast on rheumatism and on those subject to rheumatism; and (5) disinfection of towns. The members of the executive committee for England are Dr. G. H. Brandt (Nice), Dr. H. J. Johnston Lavis (Beaulieu), Dr. J. A. Macdougall (Cannes), Dr. R. Price Mitchell (Monte Carlo), and Dr. Stanley M. Rendall (Mentone). Great travelling facilities in France and abroad will be granted to members of the Congress and their families. The hotel prices at Nice will be reduced in their favour and may be ascertained beforehand. Applications for membership should be sent to Dr. Bonnal, treasurer, 19, Boulevard Victor-Hugo, Nice (Alpes-Maritimes). Dr. Hérard de Bessé, secretary-general of the Congress, Beaulieu-sur-Mer, will be happy to give all further information.

THE REGIUS PROFESSORSHIP OF MEDICINE AT OXFORD.

IN THE LANCET of Dec. 26th, 1903, p. 1828, we announced the resignation of Sir John Burdon Sanderson as Regius Professor of Medicine at the University of Oxford. The appointment to this office is, as its name shows, in the hands of the Crown, and the University has therefore no *locus standi* in the matter. But courtesy would suggest that the opinion of the University should at least be sought and it has come to our knowledge that a name has already been submitted to the Vice-Chancellor and transmitted by him to the Prime Minister for succession to the post without any of the Oxford graduates in medicine having been given a chance of recording their opinion regarding the successor of the late Regius Professor or of intimating their wishes in the matter. As we have already said, the new Regius Professor should be one not merely with a grasp of modern medicine but also one who can take a broad and statesman-like view of the principles and influence of the medical sciences. There are at least four or five Oxford graduates who would be willing and able to take the post and who, moreover, are men of the type which we have mentioned. But none of these has been asked and an attempt has evidently been made to rush the appointment through in what we think is a very undesirable manner. It is to be hoped that the Prime Minister will at least hold his hand until he has been able to learn the opinion of the Oxford graduates upon the matter. The Regius Professorship of Medicine is a post of dignity and one of importance to the University. Its holder should be a statesman-like man as well as a teacher and undue hurry in the appointing of the professor is most strongly to be deprecated.

GONORRHŒAL PYÆMIA IN INFANTS.

IN a recent number of the *Medical Record* Dr. R. B. Kimball calls attention to a form of gonorrhœal pyæmia not previously recognised. It appears that in American institutions in which infants and elder children are associated gonorrhœal vulvo-vaginitis is prevalent. The infection once introduced spreads with great rapidity, attacking practically all the females and unless precautions are taken some of the males also. During one year 600 patients were admitted to the Babies' Hospital of New York among whom occurred 70 cases of gonorrhœal vulvo-vaginitis and ten of arthritis. In these cases there was only one case of ophthalmia. A large proportion of the vaginitis was acquired in the hospital. To check the outbreaks the most elaborate precautions were necessary. Nothing but complete isolation prevented the spread of the disease. In eight of the ten cases of gonorrhœal arthritis (pyæmia) no local source of the disease could be found. No similar cases appear to have been recorded. The following case is an example. A girl, aged three months, was admitted on June 18th, 1902, for acute entero-colitis. Until the 28th there were only symptoms of mild entero-colitis. Then the temperature rose to 105° F. and on the following day the left knee and hand were swollen, red, hot, and painful. On July 1st both knees and both hands were affected. On the 2nd the ankles were involved. On the 5th fluctuation was obtained over the right ankle and aspiration yielded a drop of pus. General œdema set in and death occurred on the 12th. There was never any vaginal discharge. At the necropsy pus was found in the right shoulder-joint, the tissues about the left shoulder-joint,

and the tissues about the wrists (not the joints). The pus contained gonococci. The identification of the organism was confirmed by Professor Welch of the Johns Hopkins Hospital. In the eight cases all the patients were infants under the age of three months and, strange to say, seven were males. On the other hand, of over 70 females suffering from vaginitis only one had arthritis. In six cases there were purulent polyarthritis, peri-arthritis, and myositis. In two cases only one joint (the knee) was involved. The ankles and wrists were the joints most frequently affected In two cases the temporo-maxillary joints were involved and in three the toe- or finger-joints. The treatment consisted of aspiration or arthrotomy with application of wet dressings. The incisions healed and the joints were restored to normal with remarkable rapidity. No history of gonorrhœa in the parents or of ophthalmia neonatorum could be obtained. Six of the eight cases were fatal and at the time of the report the recovery of the two survivors was doubtful. In three cases necropsies were obtained. Arthritis, purulent infiltration of the muscles about the joints, and broncho pneumonia were found. In one case there were laryngeal abscesses and the pus as well as the laryngeal mucus yielded biscuit-shaped diplococci not retaining Gram's stain. In three cases a form of stomatitis resembling thrush was present and in one case intracellular diplococci not retaining Gram's stain were found in the scrapings from the mouth, but the organism could not be isolated and proved to be the gonococcus. Cases of gonorrhœal stomatitis in the newly born have been previously described. Dr. Kimball suggests that during cleansing of the mouth infection may have taken place from the nurse's hands and that the resulting stomatitis was the source of the pyæmia.

THE medical officer of health of the Cape Colony reports that for the week ending Dec. 5th 1903, no cases of plague were notified in the Colony. Plague infected rats continued to be found at various places in the Colony, but of 400 rats which were examined in the Cape Town and harbour board area during the week none was affected with plague.

Dr. Arthur Newsholme will deliver the inaugural address in connexion with the post-graduate lectures and demonstrations at the Mount Vernon Hospital for Consumption and Diseases of the Chest, 7, Fitzroy-square, W., on Thursday, Jan 7th, at 5 P.M. The subject of Dr. Newsholme's address will be Public Preventive Measures against Tuberculosis in Relation to the Medical Practitioner.

AT the next meeting of the Incorporated Society of Medical Officers of Health, to be held at 9, Adelphi-terrace, Strand, London, W.C., at 8 P.M., on Friday, Jan. 8th, Dr. J. Spottiswoode Cameron will open a discussion on Sophistication of Foods and important motions will be proposed. The meeting is open to public analysts and those interested in the subject.

THE Royal Commission on Sewage Disposal at its meeting on Dec. 22nd settled its report on the contamination of shell fish by sewage. The report will be published in a few days.

THE LONDON SCHOOL OF TROPICAL MEDICINE.—Of the students of the above school who presented themselves for the examination at the end of the October-December, 1903, session the following have passed: A. E Horn (Colonial Service), A. H. Barclay (Foreign Office), G. Wilson, W. J. Radford (Foreign Office), D Cowin (Colonial Service), J. E Mitchell, S G. Ranaday, C. H. Allan (Colonial Service), J. T. Cartaya, F. A. Baldwin (Colonial Service), T. F. G. Mayer (Colonial Service), F. C. Sutherland, and Guy Ruata.

THE WORKING OF THE INEBRIATES ACTS.

THE report of Dr. R. Welsh Branthwaite, H.M. Inspector under the Inebriates Acts, which has recently been issued, contains even more information than its predecessors and either with or without them might usefully be studied by every county and borough councillor and magistrate in the kingdom. Indeed, it is difficult to see how, without the careful consideration by all concerned of the points to which Dr. Branthwaite calls attention in his comments upon the statistics which he presents, thoroughly efficient working of these important Acts can ever be obtained. The progress which he shows is satisfactory as far as it goes, but some of the defects which he also criticises appear to be unnecessary and capable of remedy. Those who consider the question of the responsibility of the community for the care of the habitual inebriate should, in order to avoid confusion, bear carefully in mind the distinct forms of establishment provided by law for this purpose. The retreat established under the Inebriates Act, 1879, is for the reception of habitual drunkards voluntarily submitting themselves to its restraint. The State Inebriate Reformatory instituted under the Inebriates Act, 1898, is primarily for habitual drunkards convicted on indictment of offences punishable with imprisonment under Section 1 of that Act. As its name implies it is a State institution, provided and maintained at the expense of the Treasury. The Certified Inebriate Reformatory, also a creation of the Act of 1898, may be instituted by county or borough councils or private individuals and is primarily for the reception of inebriates convicted under Section 2 of the Inebriates Act, 1898, of minor offences connected with drunkenness four times within 12 months. Persons originally confined in State Inebriate Reformatories may be removed to Certified Inebriate Reformatories and *vice versâ*, and in practice this transference has been frequently found desirable, as the person who has been convicted of an indictable offence committed through drink often proves more tractable than the person who has become liable under Section 2 and so may be advantageously treated in the less rigorously disciplined surroundings provided by voluntary effort, whereas the comparatively harmless soaker who cannot be committed to any but a certified reformatory sometimes proves not amenable to the restraints that are there available. An important element of weakness in the administration of the Act of 1898 to which Dr. Branthwaite refers lies in the fact that it does not cover the whole ground of habitual inebriety coming before courts of law owing to the voluntary element introduced into the working of certified reformatories. Acceptance into these is dependent upon whether the managers of the institution are willing to receive the inebriate offered to them. A proportion of those convicted under Section 2 may fairly be described as cases hopeless of reform, at all events within the period for which detention is ordered. No case, perhaps, should be pronounced with authority to be beyond possibility of improvement, but persons of the type of Jane Cakebread and Tottie Fay, whose sad cases contributed largely to the institution of the certified reformatory, are precisely those whom managers of these institutions are likely to reject. This operates in two ways; the unfortunate inebriate after a short time in gaol is left at large to do mischief to himself and to the community and the magistrate who finds a drunkard thrown back upon his hands is discouraged from committing other inebriates to the reformatory. He may even misunderstand the causes at work, denounce the Act as inefficient, and delay its operation in the district where he presides. Dr. Branthwaite makes out a strong case for the admission even of the worst cases to the institutions provided by local authorities for the benefit of their localities, although to do so would necessitate taking charge of inebriates who as such would be probably irreformable and who, moreover, might be immoral, unruly, physically defective, and in all respects undesirable inmates. Moreover, the possible rejection of an apparently irremediable case encourages the magistrate to attempt to discriminate in the future for himself as to which case is capable of beneficial treatment and which is not, a matter as to which he cannot possibly be in a position to form a correct opinion.

We have suggested above that the Blue-book containing Dr. Branthwaite's report might usefully be read by all county and borough councillors and by all magistrates, because upon the provision of accommodation for inebriates by the former and upon a proper appreciation of the work done by reformatories on the part of the latter the successful working of the Act of 1898 entirely depends. With regard to the provision of accommodation we have suggested that the reception of all cases, if possible, is desirable in the public interest. Apart, however, from questions of discrimination we find by the report for 1902 that at the end of that year a number of counties and boroughs had entirely failed to avail themselves of the Act or had done so to a very slight degree only. A study of Dr. Branthwaite's figures will show this in detail. It may be summarised by saying that on June 30th, 1903, out of 495 inmates of inebriate reformatories 259, or more than 50 per cent. of the whole, came from London and the metropolitan district. Lancashire added approximately another 25 per cent. and the remaining 25 per cent. were made up by the whole of the rest of England and Wales.

The contribution of Wales at the end of 1902 amounted to 12 only, of whom 11 came from Glamorganshire and one from Carnarvonshire. We are not aware that any feature of universal sobriety entitles the rest of the principality to dispense entirely with the assistance which the Act under consideration offers, and the same observation applies to Bedfordshire, Cambridgeshire, Cornwall, Derbyshire, Herefordshire, Huntingdonshire, Lincolnshire, Oxfordshire, Rutland, Suffolk, Westmorland, and Wiltshire, from none of which at the same date had any person been committed to an inebriate reformatory. Four more counties had made use of the Act in one instance only, one on two occasions only, and Cumberland and Leicestershire, while sufficiently aware of the Act to contribute four each to the total, had not found it desirable to exceed that number.

The failure to make use of the powers given lies partly at the door of local authorities who are, however, in many instances making efforts to obtain the best possible accommodation for the treatment of their inebriates. Counties and boroughs may contribute to the construction and maintenance of a certified reformatory or may arrange for the accommodation of inmates in such institutions by payment. The majority of the certified reformatories which came early into existence were to be found in the southern portion of England. The Lancashire reformatory at Langho was not completed at the time when the Blue-book before us was compiled and the Yorkshire reformatory, the plans of which are given, had been but recently commenced. The completion of these two should inspire the building of others besides setting free accommodation elsewhere.

In addition, however, to that of the local authority the goodwill of the occupants of the bench is necessary. Magistrates may have been discouraged by the failure to obtain treatment which has followed their committal of individual cases. Want of accommodation and the unwillingness to treat apparently hopeless cases have contributed to this, but magistrates must be reminded with reference to the latter cause that the hopeless cases of the present day are due to the want of power to deal with cases not yet irremediable in the past. Reformatories are primarily for reform and must be used for those who are not too far gone to be treated if the treatment is to be effectual. Any tendency to give the drunkard "one more chance" to reform himself when he is qualified for compulsory treatment is false kindness which may result in his final ruin, and any attempt to minimise his sentence is no less cruel to him. The reformatory cannot do him much good during a term of a few months only. If it proves effective in less than the period for which his committal has taken place those who manage it have power to allow him out on licence, and considerable care is exercised to render such period of probation a useful part of the treatment.

It is possible, moreover, that the judges, who at assizes have the opportunity of calling marked attention to the Inebriates Act of 1898, do not always exercise their influence with regard to it to their fullest extent. Mr. Justice Grantham by his observations at the last Durham assizes and by the controversy in which he has involved himself with the licensed victuallers has drawn a good deal of public notice to the connexion between drunkenness and crime. He has, however, thrown upon the publicans a very large proportion of the blame which in many cases may be deserved and has not, so far as we are aware, contributed in any marked degree to the effectual working of the Act, either by reference to the powers which it gives or by criticising, with the aid of his experience, its merits and demerits. The man or woman whom drink converts into a violent criminal is a person whom most publicans would gladly be rid of, but it is for judges and magistrates to place such inebriates under salutary restraint.

Section 1 provides as follows:—

> Where a person is convicted on indictment of an offence punishable with imprisonment or penal servitude, if the court is satisfied from the evidence that the offence was committed under the influence of drink or that drunkenness was a contributing cause of the offence, and the offender admits that he is, or is found by the jury to be, an habitual drunkard, the court may in addition to, or in substitution for, any other sentence order that he be detained for a term not exceeding three years in any State reformatory or in any certified inebriate reformatory the managers of which are willing to receive him.

The rest of the section deals with the procedure to be adopted should the prisoner refuse to admit his habitual drunkenness so as to necessitate evidence being heard upon the subject. Up to the end of 1902 there had been no State reformatory available and so the figures given in Dr. Branthwaite's report refer only to certified reformatories willing to receive the inebriate convicted on indictment. This accounts in a measure for the number of committals to reformatories being small, coupled as it is with the necessity which still remains for conviction upon indictment at quarter sessions or assizes. It is, however, to the nature of the offences which have led to committals to reformatories under this section that Dr. Branthwaite points in support of his suggestion that insufficient use has been made of it. There have been in four years 96 such committals, of which no less than 78 have followed convictions under the Cruelty to Children Act. This is equivalent to saying that but for the efforts of the National Society for the Prevention of Cruelty to Children to save children from neglect and ill-treatment (not to reform drunkards) this useful section would have been almost inoperative. This state of affairs must to some extent be due to the apathy of judges and magistrates, although there is one cause which no doubt prevents it from being put into effect in some otherwise suitable instances. To this Dr. Branthwaite does not appear to give weight. It is the necessity, which reference to the section cited will show, of proving by evidence that the convicted person is a habitual drunkard in cases where he denies it. In some instances this may be easy—as, for example, where frequent convictions at a police-court for offences connected with drunkenness have preceded the conviction on indictment. On the other hand, the convicted person may not be a "habitual" drunkard at all, or he may be one, and yet there may be considerable difficulty in proving him to be such to the satisfaction of the jury. Again, apart from lack of evidence, juries have their prejudices; there may be persons upon any jury who for various reasons would rather see the convicted person punished without reference to the Inebriates Act. It is, however, for judges and chairmen of quarter sessions primarily to render this section effective if the community and the victims of inebriety are to reap the full advantage of it. Imprisonment may precede the term in a reformatory as the section shows.

The statistics which relate to the use of retreats under the Act of 1879 by persons consenting to be treated in them are not very encouraging, although they show some increase in the number of those admitted. There were 552 received into retreats in 1902, as against 433 in 1901 and 422 in 1900. In 1899 there were 437. The increase for 1902 is accompanied by a curious rise in the number of females admitted. This rose to 305 as against 186 in the previous year. As a rule there has been a preponderance of women among those committed to reformatories and a preponderance of men among those voluntarily consigning themselves to retreats, and the new condition may be merely temporary and accidental. That the use made of the power of self-committal to restraint of this kind should be small compared with the number of habitual drunkards is not surprising when we consider that the drunkard in his soberest moments is not a person whose good resolutions are likely to last long and no doubt they have often time to weaken before the formalities imposed by the Act are complied with. At present the inebriate in England cannot as such be compelled to accept treatment, as he can in some countries. To the possibility of providing for this Dr. Branthwaite refers, as well as to the other cause which has militated against the success of the retreat. This is simply the lack of funds. The poor patient finds little accommodation provided for him and the destitute inebriate

finds none unless charity will come to his aid. These persons are, in fact, in a worse position than if drunkenness led them to offend against the law. On the whole the Blue-book shows regular if somewhat slow progress in the work of the two classes of reformatory and of retreats, and the perusal of its contents may be recommended to those who can accelerate a development which is much to be desired.

POST-GRADUATE WORK ABROAD.

VIII. CHICAGO.[1]

BY J. B. MURPHY, A.M., M.D.,

PROFESSOR OF SURGERY IN THE NORTH-WESTERN UNIVERSITY SCHOOL, CHICAGO; SURGEON-IN-CHIEF, MERCY HOSPITAL, CHICAGO, ETC.

THE conditions underlying post-graduate study in Chicago are entirely different from those obtaining in Europe, and especially in Berlin, Vienna, or Paris. The great majority of hospitals are not under government or municipal control and we have no "faculty of medicine" in a public official sense. Neither have we bodies like the "Assistance Publique" whose ticket entitles the holder to admission to the various hospitals under its control. The place of these two bodies is largely taken by the post-graduate schools, of which more anon. Chicago, like Gaul, is divided into three parts, separated by the Chicago river and its branches. Each of these has a post-graduate school, one or more medical colleges, and many hospitals.

The largest division—the west—has the so-called "medical centre" of Chicago, with the County Hospital for a nucleus. This institution is one of the largest general hospitals in the United States, having 1200 beds. The county morgue and the Detention Hospital for the Insane are on the same grounds. Clinics are held in the amphitheatre continuously throughout the day by various members of the attending staff but there is no bedside instruction. A ticket, good for one year, admitting the holder to all clinics and necropsies costs five dollars (one pound). Within a square or two are four medical colleges, a post-graduate school, and three hospitals, which are the Presbyterian Hospital, the West Side Hospital, and the Women's Hospital.

The south division has the new but very prosperous Chicago University. The medical schools and hospitals are again located close to each other but some miles nearer the city proper than the university. The principal hospitals are the Mercy Hospital, with 260 beds, the Wesley Hospital, with about half the number, and St. Luke's Hospital. The north side has fewer hospitals and medical schools. The most important of these are the Alexian Brothers' Hospital for men only (this is the best constructed and equipped hospital in Chicago and has 280 beds; all of the patients may be used for clinical purposes, though many of them are pay patients), St. Joseph's Hospital, and the Augustana Hospital.

A prospective seeker for post-graduate instruction could write to the secretaries of the various post-graduate schools for their annual announcements. Their addresses are as follows: west side, Dr. W. L. Noble, 819, West Harrison-street; south side, Dr. F. H. Martin, 2400, Dearborn-street; and north side, Dr. M. L. Harris, 176, East Chicago Avenue. After perusing the lists of faculties and weighing the advantages offered by each institution he will probably make a decision or possibly he may delay it until arriving in the city. The clerks at the schools are provided with lists of rooms, boarding houses, &c. The faculties of the schools are all connected with a hospital, sometimes with several, and schedules of the various operations and medical clinics for the day and the day following are displayed on the bulletin board. The time is pretty well occupied with the clinics in the schools and at the hospitals near by. However, most physicians find time for a course in some special line—operations on the cadaver, bacteriology, pathology, histology, and the like. As a general rule, tickets for two or three months stay at a post-graduate school will cost from $75 to $100 (from 15 to 20 pounds); the special courses each cost from $10 to $25 (from two to five pounds), depending on the number of sessions, &c. Some reduction is generally made when a stay of two, three, or more months is made. No precise figures can be given for board or lodging, as individual tastes differ so much. The former in families will run from 15s. per week, the latter from 8s. to 10s., including heat, light, and attendance. There is no lack of opportunities for special work. For instance, in ophthalmology and otology the Illinois Eye and Ear Infirmary, which is maintained by the State, is located here and has a very large out-patient department in addition to the wards. Clinic tickets, good for one year, cost five dollars. There is also a private Eye, Ear, Nose, and Throat Hospital (Dr. J. R. Hoffman, secretary, 206, East Washington-street) which gives regular instruction in diseases of any or all of these organs. For laboratory work there are abundant facilities also. Arrangements may be made with the instructors in the schools or colleges to pursue any desired subject, the cost depending on the importance of the subject and the length of time necessary. The University of Chicago offers courses on every conceivable subject—advanced anatomy, pathology, bacteriology, anatomy of the eye and ear, neuro-pathology, &c. These usually occupy one quarter (three months) of the university year and cost from $25 to $50 (from five to ten pounds) each.

For those interested in psychiatry the Detention Hospital affords a wide field. The Insane Court is held here every Thursday and all patients brought in since the previous session are examined. If committed to the asylums they are generally sent to the county one at Dunning, some 15 miles out in the suburbs (fare, six cents). The infirmary, or poor house, is located here also, the two institutions combined having a capacity of some 2500. The nearest State asylums are at Elgin, 25 miles west (fare $1, or 4s.), with a capacity of 1500, and Kankakee, 50 miles south (fare $1½, or 6s.), with a capacity of 2500. As regards medical libraries, the Newberry Library on the north side (ten minutes' ride), while of recent origin, has some 20,000 volumes and about 200 current periodicals. Chicago has nothing to boast of in the way of pathological museums. These are of slow growth and as the medical colleges were burned in the great fire or have been started since there is little but a nucleus as yet. In general museums the Field Columbian Museum (south, 30 minutes' ride), though less than a decade old, has a really wonderful collection of specimens in comparative anatomy, anthropology, zoology, &c. The Academy of Sciences (north, 20 minutes' ride) has a similar but smaller collection.

The various medical societies, surgical, gynæcological, &c., have been recently combined with the Chicago Medical Society and are now branches of it. The parent society and its branches have meetings once a week or more often. Little or no influence is exerted by the season of the year on the character of the work. The summer is never unduly hot for any length of time and the nights are generally cool owing to the lake breezes. Early in the spring—February and March—there is (as elsewhere) some raw, damp weather for a few days. For physicians desiring to spend a few days only in the various medical centres of the United States, combining business with pleasure and coming over, as the Hindoos say, "to smell the air," the presentation of a professional card will insure them courteous attention and admission to the clinics for the short time of their stay.

The advantages of Chicago post-graduate students are the accessibility of the different institutions. All distances were measured from the court house and the principal hospitals, colleges, &c., are within a radius of two miles in each direction. By a series of electric trams (fare five cents., or 2½d.) nearly every desired point can be reached within a square or so. The surgeons in Chicago rarely ever operate in private residences; all of their operations are made in the hospitals. Visiting physicians are admitted to the private operations. The custom adds enormously to the opportunities for witnessing surgical work in Chicago.

Next, the hospitality of the Chicago people which, of course, includes the physicians. The latter take especial pains to interest their visiting brethren and divide their stores of wisdom with them. The enterprise which has made Chicago world-famed from a commercial standpoint extends to the medical fraternity also. Nowhere in the country do we find the doctors more harmonious, skilled, and progressive.

[1] No. I. (Paris), No. II. (Berlin), No. III. (Vienna), No. IV. (Budapest), Nos. V. (Florence) and VI. (Milan), and No. VII. (New York) were published in THE LANCET of Sept. 12th (p. 781), Sept. 26th (p. 912), Oct. 17th (p. 1121), Oct. 24th (p. 1194), Nov. 21st (p. 1465), and Nov. 28th (p. 1534), 1903, respectively.

Looking Back.

FROM

THE LANCET, *SATURDAY*, DEC. 31, 1825.

REVIEWS.

II.[1]

Case of Carotid Aneurism, successfully treated by tying the Artery above the Aneurismal Tumour. By JAMES WARDROP, Esq., Surgeon Extraordinary to the King. Part 1st of the 13th Vol. of the Medico-Chirurgical Transactions. Longman, London.

WHILE the *science of Medicine* may be said to revolve in a circle, and while it may be fairly questioned whether *the practice of Physic* be more or less useful to the human species than it was in the days of Galen and Hippocrates, the mere tyro has only to glance at the history of the *art of Surgery*, during the last half century, and be delighted, nay, fascinated, by its astonishing progress—its almost incredible improvement.

In connexion with the subject to be treated of, it may be added, that in no department of surgery is the triumph of genius and talent, of anatomy and pathology, more conspicuous than in that which relates to the history and the treatment of aneurism. Before the days of the immortal John Hunter, the nature of this disease was not well understood, and the means of cure often proved ineffectual. Some patients were cured spontaneously by an effort of Nature, some by the assistance of pressure, and many were left to the horrid fate of lingering out life under an impression that every moment might be their last; the parietes of an aneurismal sac, or the common teguments, often being the only barrier between existence and eternity. Of those persons, who submitted to the *old operation*, a great many died, and many had very tedious cures. In this state of anxiety, uncertainty, and imperfection, with respect to the proper treatment of aneurism, Hunter arose, like the morning sun, and dispelled the shades of darkness. His profound knowledge of the animal economy enabled him to form a rational theory, upon which he not only grafted a new operation—the celebrated operation for popliteal aneurism,—but he also laid the basis of the astonishing operations of his successors. Could our ancestors start from their graves, with Hunter in the front rank, what would be their surprise—their amazement, on beholding the surgeons of these days, not only successfully tying the femoral, the humeral, and the external and internal carotid arteries, but absolutely putting ligatures on the common iliac, the external iliac, the internal iliac, the common carotid, and the subclavian arteries!—Would they believe their own eyes when they remarked one dexterous operator tying the *arteria innominata*, and another still more hardy, as the *ne plus ultra* of our art, ripping up the abdomen, turning aside the intestines, and absolutely carrying a ligature around the great trunk of nourishment of the whole animal system, *the aorta!!!*

Since Hunter's days the pathology of aneurism has been fully developed, especially by Scarpa and Burns. The mode in which nature arrests hæmorrhage, and the manner in which ligatures act upon tied arteries, have been completely investigated by Thompson, Jones, and many others. In consequence of a combination of the improvements of the whole of the *faculty of surgery*, the above mentioned series of new operations has been performed; every artery of the system has been included in a ligature.

[1] Only a portion of this Review has been transcribed.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8581 births and 5159 deaths were registered during the week ending Dec. 19th. The annual rate of mortality in these towns, which had been 17·6, 18·6, and 19·2 per 1000 in the three preceding weeks, declined again to 17·8 per 1000. In London the death-rate was 16·8 per 1000, while it averaged 18·3 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 8·2 in King's Norton, 9·0 in East Ham, 9·1 in Bournemouth, 9·7 in Barrow-in-Furness, 10·3 in Grimsby, 10·6 in Hornsey, and 11·1 in Burton-on-Trent; the highest rates were 23·1 in Hanley, 23·2 in Walsall, 23·5 in Wigan, 23·6 in Warrington, 24·0 in Swansea, 24·1 in Stockton-on-Tees, 24·4 in Gateshead, 34·5 in York, and 38·0 in Preston. The 5159 deaths in these towns included 423 which were referred to the principal infectious diseases, against 430, 402, and 422 in the three preceding weeks; of these 423 deaths, 134 resulted from measles, 113 from whooping-cough, 71 from diarrhœa, 43 from diphtheria, 35 from "fever" (principally enteric), 24 from scarlet fever, and three from small-pox. In Croydon, Hornsey, Tottenham, Norwich, Derby, Halifax, South Shields, Newcastle-on-Tyne, and in ten other smaller towns no death from any of the principal infectious diseases was registered; while among the other towns they caused the highest death-rates in Willesden, Wigan, Warrington, Bury, Preston, Rotherham, York, and Gateshead. The greatest proportional mortality from measles occurred in Willesden, West Ham, Ipswich, Aston Manor, Warrington, Bury, Preston, Rotherham, and York; from whooping-cough in Wolverhampton, Walsall, Liverpool, Wigan, Warrington, Rochdale, York, Gateshead, Merthyr Tydfil, and Swansea; and from diarrhœa in Walsall, Preston, Gateshead, Rhondda, and Merthyr Tydfil. The mortality from scarlet fever, from diphtheria, and from "fever" showed no marked excess in any of the large towns. Two fatal cases of small-pox were registered in Gateshead and one in Warrington, but not one in any other of the 76 large towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 40, 35, and 32 at the end of the three preceding weeks, had further declined to 26 at the end of the week; six new cases were admitted during the week, against three, three, and two in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Dec. 19th, was 1654, against 1770, 1715, and 1717 on the three preceding Saturdays; 188 new cases were admitted during the week, against 157, 161, and 173 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 399, 358, and 417 in the three preceding weeks, declined again to 344, and were 45 below the number in the corresponding period of 1902. The causes of 56, or 1·1 per cent., of the deaths in the 76 large towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Bradford, Leeds, Hull, Newcastle-on-Tyne, and in 49 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Wallasey, Liverpool, Bootle, Halifax, Sheffield, and South Shields.

During the week ending Saturday last, Dec. 26th, 6251 births and 4464 deaths were registered in 76 of the largest English towns. The annual rate of mortality in these towns, which had been 18·6, 19·2, and 17·8 per 1000 in the three preceding weeks, further declined last week to 15·4 per 1000. The rates in the several towns ranged from 7·1 in Barrow-in-Furness, 7·3 in Leyton, 7·6 in East Ham, 7·8 in Walthamstow, 7·9 in Hastings, 8·0 in Hornsey, 8·9 in Smethwick, and 9·0 in Tottenham and in Reading, to 21·1 in Great Yarmouth, 21·5 in Bradford, 22·6 in Merthyr Tydfil, 23·4 in Stockport, 24·1 in Stockton-on-Tees, 24·6 in Preston, 26·7 in Warrington, 29·4 in Wigan, and 30·6 in York. In London the death-rate was 13·6 per 1000, while it averaged 16·3 per 1000 in the 75 other large towns. The 4464 deaths from all causes in the 76 towns last week included 388 which were referred to the principal infectious diseases, against 401, 422, and 423 in the three preceding weeks; of these 388 deaths 130 resulted from measles, 111 from whooping-cough, 47 from diarrhœa, 38 from diphtheria, 32 from "fever" (principally enteric), 25 from scarlet fever, and five from small-pox. In Croydon, Hornsey, Walthamstow, Brighton, Reading, Hull, South Shields, and eight other small towns no death from any of the principal infectious diseases was registered; while among the other towns they caused the highest death-rates in Willesden, West Bromwich, Warrington, Preston, Rotherham, Gateshead, and Swansea. Measles was proportionally most fatal in Willesden, Great Yarmouth, West Bromwich, Warrington, Preston, Leeds, Rotherham, and Sunderland, diphtheria in Hanley, and whooping-cough in Leyton, Liverpool, Wigan,

Warrington, Stockton-on-Tees, Gateshead, and Swansea; the other principal infectious diseases caused no excessive mortality in any of the large towns. Three deaths from small-pox were registered in Warrington, one in London, and one in Tynemouth. The Metropolitan Asylums hospitals contained 27 small-pox patients on Saturday last, Dec. 26th, against 35, 32, and 26 on the three preceding Saturdays; seven new cases were admitted during the week, against three, two, and six in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 1715, 1717, and 1654 at the end of the three preceding weeks, had further declined to 1617 at the end of last week; 142 new cases were admitted during the week, against 161, 173, and 188 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory organs, which had been 358, 417, and 344 in the three preceding weeks, further declined last week to 271, and were 138 below the number in the corresponding period of last year. The causes of 54, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Bradford, Leeds, Newcastle-on-Tyne, and in 48 other smaller towns; the largest proportions of uncertified deaths were registered in Northampton, Liverpool, Bootle, Warrington, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·7, 20·0, and 22·4 per 1000 in the three preceding weeks, declined again to 21·0 per 1000 during the week ending Dec. 19th, but showed an excess of 3·2 per 1000 over the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·7 in Leith and 15·8 in Greenock, to 23·2 in Perth and 23·3 in Paisley. The 686 deaths in these towns included 33 which were referred to measles, ten to diarrhœa, nine to whooping-cough, three to diphtheria, two to small-pox, two to scarlet fever, and two to "fever." In all, 61 deaths resulted from these principal infectious diseases during the week, against 62, 53, and 73 in the three preceding weeks. These 61 deaths were equal to an annual rate of 1·9 per 1000, which was 0·4 per 1000 above the mean rate for the week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 17, 22, and 34 in the three preceding weeks, declined again to 33, of which 30 occurred in Glasgow and two in Edinburgh. The deaths from diarrhœa, which had been 22, 12 and 15, in the three preceding weeks, decreased again to ten, all of which were registered in Glasgow. The fatal cases of whooping-cough, which had been nine, seven, and 13 in the three preceding weeks, declined again to nine and included four in Glasgow and three in Aberdeen. The deaths from diphtheria, which had been five, four, and two in the three preceding weeks, rose again to three, of which two occurred in Edinburgh. The fatal cases of small-pox, of scarlet fever, and of "fever" were all registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 148, 133, and 192 in the three preceding weeks, declined again to 184, but were 14 in excess of the number in the corresponding period of 1902. The causes of 27, or nearly 4 per cent., of the deaths in these eight towns were not certified.

In eight of the principal Scotch towns the annual rate of mortality, which had been 20·0, 22·4, and 20·9 per 1000 in the three preceding weeks, declined to 20·8 per 1000 during the week ending Dec. 26th, but was 5·4 per 1000 above the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·0 in Paisley and 13·7 in Leith to 23·3 in Greenock and 24·9 in Dundee. The 680 deaths in these towns last week included 25 from measles, 16 from whooping-cough, 16 from diarrhœa, four from small-pox, four from scarlet fever, four from diphtheria, and four from "fever." In all, 73 deaths resulted from these principal infectious diseases last week, against 53, 73, and 61 in the three preceding weeks. These 73 deaths were equal to an annual rate of 2·3 per 1000, which was 1·0 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 22, 34, and 33 in the three preceding weeks, further declined last week to 25, of which 23 occurred in Glasgow. The deaths from whooping-cough, which had been seven, 13, and nine in the three preceding weeks, rose again to 16 last week, and included eight in Glasgow, five in Aberdeen, and two in Edinburgh. The fatal cases of diarrhœa, which had been 12, 15, and 10 in the three preceding weeks, increased last week to 16, of which 10 were registered in Glasgow. The deaths from small pox, which had been three, two, one, and two in the four preceding weeks, further rose to four last week, and all occurred in Glasgow. The fatal cases of scarlet fever, which had been one, six, and two in the three preceding weeks, rose again last week to four, of which two were registered in Glasgow. The deaths from diphtheria, which had been four, two, and three in the three preceding weeks, further rose to four last week, and included two in Glasgow and two in Edinburgh. The fatal cases of "fever," which had been two in each of the two preceding weeks, increased last week to four, of which two occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 138, 192, and 184 in the three preceding weeks, further declined last week to 180, and were 13 below the number in the corresponding period of last year. The causes of 26, or nearly 4 per cent., of the deaths registered in these towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·8, 27·5, and 24·6 per 1000 in the three preceding weeks, rose again to 25·6 per 1000 during the week ending Dec. 19th. During the previous four weeks the death-rate averaged 25·6 per 1000, the rate during the same period being 17·7 both in London and in Edinburgh. The 186 deaths of persons belonging to Dublin registered during the week under notice were seven in excess of the number in the preceding week and included ten which were referred to the principal infectious diseases, against 11, 13 and 11 in the three preceding weeks; of these, four resulted from whooping-cough, two from scarlet fever, two from diphtheria, one from "fever," and one from diarrhœa, but not any from small pox or from measles. These ten deaths were equal to an annual rate of 1·4 per 1000, the death-rates for the week from the principal infectious diseases being 1·3 in London and 0·8 in Edinburgh. The fatal cases of whooping-cough, which had been three, five, and seven in the three preceding weeks, declined again to four. The 186 deaths of persons in Dublin during the week included 33 among children under one year of age and 63 among persons aged 60 years and upwards; the deaths of infants exactly corresponded with the number in the preceding week, while those of elderly persons showed a slight excess. One death from violence and seven inquest cases were registered; and 64, or more than a third, of the deaths occurred in public institutions. The causes of nine, or nearly 5 per cent., of the deaths registered in Dublin last week were not certified.

The death-rate in Dublin, which had been 27·5, 24·6, and 25·6 per 1000 in the three preceding weeks, declined again to 19·9 per 1000 during the week ending Dec. 26th. During the past four weeks the death-rate has averaged 24·4 per 1000, the rates during the same period being 16·8 in London and 17·1 in Edinburgh. The 145 deaths of persons belonging to Dublin, registered during the week under notice, showed a decline of 41 from the number in the preceding week, and included seven which were referred to the principal infectious diseases, against 13, 11, and 10 in the three preceding weeks; of these, three resulted from whooping-cough, two from "fever," one from measles, and one from scarlet fever, but not any from small pox, diphtheria, or diarrhœa. These seven deaths were equal to an annual rate of 1·0 per 1000, the death-rates from the principal infectious diseases last week being 1·2 in London and 0·5 in Edinburgh. The deaths from whooping cough, which had been five, seven, and four in the three preceding weeks, further declined last week to three. The fatal cases of "fever," which had been four, one, and one in the three preceding weeks, rose last week to two. The 145 deaths in Dublin last week included 26 of children under one year of age and 38 of persons aged 60 years and upwards; the deaths of infants showed a slight decline from the number in the preceding week, while those of elderly persons decreased very considerably. Five inquest cases and two deaths from violence were registered, and 61, or more than 42 per cent., of the deaths occurred in public institutions.

The causes of six, or more than 4 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES

ROYAL NAVAL VOLUNTEER RESERVE

THE undermentioned gentlemen have been appointed surgeons, viz.:—Marcus Sinclair Paterson and Reginald John Edward Hanson (dated Dec. 23rd, 1903).

2ND LIFE GUARDS.

Surgeon-Captain J. H. Power, from Royal Horse Guards, to be Surgeon-Major (dated Dec. 21st, 1903).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. F. Williamson, C.M.G., to be Colonel to complete establishment (dated Dec. 20th, 1903).

Major H. Carr and Lieutenant M. C. Beatty are nominated for service in the Bombay Command, vice Lieutenant-Colonel Birrell and Captain MacDougall, whose tour has expired. Captain J. M. Cuthbert, attached to Agra Station Hospital, is ordered to assume the medical charge of the 17th Infantry (the Loyal Regiment). Lieutenant E. S. Worthington, attached to Agra Station Hospital, is ordered to Jhansi for duty.

INDIAN MEDICAL SERVICE.

The King has approved of the following promotions made by the Government of India:—Majors to be Lieutenant-Colonels: *Bengal Establishment:* James John Pratt and Robert Shore. *Madras Establishment:* William Burney Bannermann and Henry Thomson. *Bombay Establishment:* Carrapiet John Sarkies.

The King has also approved of the retirement from the service of the undermentioned officers: Lieutenant-Colonel Henry Augustus Fitzroy Nailer (dated Oct. 20th, 1903), Lieutenant-Colonel William Keith Hatch (dated Nov. 15th, 1903), and Lieutenant-Colonel Daniel Francis Barry (dated Dec. 16th, 1903).

MEDICINE AND SANITATION IN MOROCCO.

We learn from recent articles in the *Archives de Médecine Navale* that Dr. Raynaud, the chief sanitary official in Algeria, has embodied the observations that he made during several visits to Morocco in an octavo volume of 205 pages, with plates and a map, which has been published under the auspices of the Governor-General of Algeria. The work is divided into three parts which are devoted respectively to hygiene, medicine, and climatology. The first part comprises four chapters under the following headings: 1. General Hygiene, including ethnology, slavery, marriage, burial, clothing, cosmetics, food, dwellings, physical exercises, and monastic establishments. 2. Public Hygiene, including mosques, baths, markets, conservancy, slaughter houses, sewers, drinking water, cemeteries, prisons, and pilgrimages (Moslem to Mecca and Christian to Jerusalem). 3. Public Assistance, including hospitals and benevolent institutions (in Morocco this branch of civil polity is entirely in the hands of the foreign population). 4. Causes of Depopulation, including famine, epidemics, alcohol, tobacco, *kif* (Indian hemp), opium, and aphrodisiacs. The second part of Dr. Raynaud's book contains seven chapters on the following subjects: 1. Present State of Medicine in Morocco, including medical schools and curricula, text-books, diplomas, *tobibs*, *santons*, talismans and amulets, precious stones and their medicinal properties, and general notions regarding the science of medicine. 2. External Pathology, including surgical instruments, anæsthesia, hypnosis, minor surgery, ophthalmology, and obstetrics. 3. Internal Pathology. 4. Syphilis and Cutaneous Diseases. 5. Therapeutics, including organo-therapy and native drugs. 6. Veterinary Surgery. 7. Arab Medicine.

THE CARE OF SOLDIERS' TEETH.

Mr. A. F. A. Howe, L.D.S.R.C.S., who read a paper before the October meeting of the Southern Counties Branch of the British Dental Association on the Dental Requirements of the Army, has had his observations reprinted in pamphlet form. It contains, perhaps, nothing that is new, but it is nevertheless a powerful plea for a more adequate recognition of the services of the dentist in the army. The old policy of doing nothing for a soldier's teeth till they ache and then extracting them is not an economical procedure. During the late war reserve men were rejected in consequence of loss of teeth and at the seat of war many men were temporarily disabled and many had to be invalided home in consequence of some defect of the teeth. Then again recruits are rejected who might be saved to the army if the services of a dentist were called in. In the post office and prison service a candidate otherwise fit is accepted provisionally subject to his or her teeth being made serviceable, and the same rule ought to be made with regard to recruits, though in this case the expenses would have to be borne by the army. The matter is one of very great importance and should receive greater attention than has hitherto been given to it.

THE ROYAL NAVAL HOSPITAL, PLYMOUTH.

The Civil Lord of the Admiralty, who is on a visit of inspection at Devonport, on Dec. 17th, 1903, paid a visit to the Royal Naval Hospital where he was received by Inspector-General T. Bolster, Deputy Inspector-General T. D. Gimlette, Fleet-Surgeon W. Eames, and Fleet-Surgeon D. J. P. McNabb. Various departments were inspected, including the Trafalgar block, in which temporary arrangements were made a short time ago for the accommodation of probationer sick-berth stewards and where, it is understood, extensive alterations will be carried out to facilitate the efficient training of probationers. The lunatic ward and general wards were also visited. A scheme for renovating the greater part of the hospital is now being carried out.

DEATHS IN THE SERVICES.

Surgeon-Colonel Sir George Thomson, K.C.B., on Dec. 23rd, in his sixty-first year. He entered the Indian Medical Service in 1865 and was attached to the 4th Sikhs and 1st Punjab Cavalry. In 1878–79 he served in the Afghan war (mentioned in despatches), was principal medical officer with the Chitral Relief Force on the line of communications in 1895 (mentioned in despatches, C.B.) and in 1897–98 he acted as principal medical officer of the Tirah Expeditionary Force (mentioned in despatches and K.C.B.).

Correspondence.

"Audi alteram partem."

THE FEES AND EXPENSES OF PUBLIC VACCINATORS IN RURAL DISTRICTS.

To the Editors of THE LANCET.

SIRS,—The article by your correspondent on vaccination fees[1] is in no way too strong. I have worked out the figures of payment in my own district for the last four years and they are as follow:—

Year.	Number of vaccinations per year.	Number of visits paid to secure vaccination.	Mileage to secure vaccination.	Average fee per visit.	Average fee per mile.
1900 ...	70	200	800	2s. 0d.	6d.
1901 ...	54	150	600	2s. 4d.	7d.
1902 ...	54	180	720	1s. 9½d.	5¼d.
1903 (three quarters)	46	150	600	2s. 2½d.	6½d.

The fees paid to me are the minimum fixed by the Local Government Board—viz., 1s. each child who is not vaccinated by the end of the fourth month and 5s. for each successful vaccination. When we consider that a large proportion of my cases lie many miles from my home, that they must be visited at least twice and many of them more than that, and that the visits must be made by appointment, it will appear how ridiculously inadequate the fees are. The Local Government Board is, I believe, aware of this hardship but it makes no attempt to protect the interests of the public vaccinator unless the public vaccinator appeals to

[1] THE LANCET, Dec. 19th, 1903, p. 1769.

it on the establishment of a "contract" with his board of guardians.

I am, Sirs, yours faithfully.

Rugby, Dec. 21st, 1903. J. HUTCHINSON.

To the Editors of THE LANCET.

SIRS,—The article on this subject from a correspondent in THE LANCET of Dec. 19th puts the matter very clearly, but there is one point not mentioned by him, or in your annotation in the same issue, which I think in fairness to public vaccinators ought to have received some comment. It is this. Persons (mostly young women) get vaccinated at a surgery and instead of coming for inspection at the appointed time, either do not come at all or else send, generally late in the evening, to say that they are ill and want to be seen at once. Of course, such messages have to be attended to only to find the healthy reaction usual eight to ten days after inoculation and the sole cause of complaint. In the rush of work those who had not returned for inspection could not always be visited and in some instances, owing to wrong addresses having been given, they could not be found. These vaccinations and visits are not paid for.

I once had to attend a patient right through a sharp attack of pneumonia contracted six days after I had vaccinated. When I sent my account it was promptly brought back by the father who told me more plainly than politely that he would not pay; that as I had put the disease in his child it was my duty to get it out; and that if he had thought the illness due to anything else other than the vaccination I should have been the last person he would have had for a medical attendant. As the vaccination had not taken I got nothing except a lot of trouble, expense, and two night calls, to say nothing of the abuse.

I am, Sirs, yours faithfully,

Dec. 21st, 1903. A SEMI-RURAL P. V.

To the Editors of THE LANCET.

SIRS,—Public vaccinators must one and all be grateful to your correspondent who in THE LANCET of Dec. 19th has given such a telling array of facts and figures against the menaced reduction in the present hardly enough earned fees for public vaccination. That the recent "big bills" which guardians have been called upon to pay have been entirely due to revaccinations necessitated by the small-pox scare is strikingly shown by the following figures from a certain union:—

Year.	Primary vaccinations.	Revaccinations.
1900	1018	0
1901	964	1
1902	1028	55
1903	1089	3794

At the present time there are practically no revaccinations and the average of primary vaccinations continues pretty much as it was during the previous four years, so that while the revaccinations have risen from zero to 3794 and have again sunk to zero the primary vaccinations have maintained their average. To base a claim for reduction of the fee for primary vaccination upon the altogether abnormal and temporary increase of the numbers of revaccinations would therefore be most unjust. The two classes of cases are upon an entirely different footing, as the following will show:—

Primary Vaccinations.	*Revaccinations.*
1. The parent must be notified of intention to visit.	1. No notification required.
2. The patient must be vaccinated and inspected at home.	2. The patient may be vaccinated at surgery.
3. Patients must be vaccinated upon day of notification and between the hours of 9 A.M. and 4 P.M.	3. May be done any day and at any time.
4. Must be certified.	4. No certificate required.
5. Cases occur singly as a rule and often far apart.	5. Often occur in groups and close together.

Comparisons are sometimes made between the fees of the private practitioner and those of the public vaccinator, but it is often forgotten that the work entailed upon each is altogether different. Here are a few of the differences:—

Private Practitioner.	*Public Vaccinator.*
1. Has no register to keep.	1. Must keep strict record of every case in register of 16 columns for each case.
2. Has no official clerical work.	2. Has all sorts of "forms," "notices," "returns," and statistics to make up.
3. Has no unclaimable work. Can charge for every visit, for all medicines, &c.	3. Has a great deal of unremunerative work, such as fruitless visits, unsuccessful cases, postponement certificates, after-attendance upon cases, supply of dressings, supply of medicines, &c.
4. Can vaccinate and inspect at surgery at any time.	4. Must vaccinate and inspect all primary vaccinations at their homes between 9 A.M. and 4 P.M.
5. Is not responsible for certification of case.	5. Is responsible for certification.
6. Is under no compulsion *re* asepsis and after-treatment, or as regards number of marks.	6. Is under compulsion *re* all of these.
7. Is not under Government inspection.	7. Is under Government inspection.

It is also contended that the vaccination work of the public vaccinator is more efficiently done than that of the private practitioner, and it is a well-known fact that the great majority of "insusceptible" certificates are filled up by the latter.

Another point which ought to be borne in mind is the unpopularity of the work of the public vaccinator and the undoubted loss of practice that is involved in the conscientious performance of his public duty and the vast amount of time that this takes up—time, too, which he can ill spare from his ordinary visiting work. The amount of the latter, in consequence of his inability to attend to it and the unpopularity of his vaccination work, he soon finds diminishing. I therefore hold that any reduction in the present minimum scale of fees would be unjustifiable.

I am, Sirs, yours faithfully,

Dec. 21st, 1903. DELTA.

THE LUNG REFLEX OF ABRAMS.

To the Editors of THE LANCET.

SIRS,—In a former letter (Nov. 7th, p. 1322) I endeavoured to show that pulmonary suction or "tension" (which is much the same thing) depends essentially upon the action of the inspiratory muscles. Dr. Auld in his reply (Nov. 21st, p. 1462) adversely criticises my conclusion. While admitting that the muscles of inspiration take part in the initial establishment of pulmonary tension soon after birth, he denies the action of these muscles in maintaining it throughout life; he denies, to use his own words, "that such action is thereafter maintained and perpetuated to a similar purpose" because "the conditions are ..... reversed and the inspiratory muscles instead of endeavouring to establish a pulmonary suction are in reality directed rather against it." I can put no other interpretation upon these words than that Dr. Auld at the time he wrote them meant to imply that the inspiratory muscles, once pulmonary suction is fairly established, do not contribute to the maintenance of what we may call the normal average suction and that he had overlooked the fact which I pointed out in my next letter (Nov. 28th, p. 1531)—namely, that even in ordinary quiet breathing the effect of the action of the inspiratory muscles is to make the mean size of the chest, and therefore pulmonary suction, greater than they are when breathing ceases in expiration and consequently that these muscles take a life-long, *moment by moment*, part in the maintenance of normal average suction. Now how does Dr. Auld meet this argument in his last letter (Dec. 5th, p. 1614)? He is surprised that I should "deem it necessary to insist on such an elementary fact as that the inspiratory muscles augment pulmonary suction." The elementary fact I insisted on was the fact, overlooked by Dr. Auld, that so long as breathing lasts the mean of the chest is greater than when the inspiratory muscles cease to act and that therefore the muscles constitute a constant factor in the maintenance of normal suction.

Dr. Auld proceeds to repeat his statements to the effect (1) that after the initial establishment of pulmonary suction (or tension) the inspiratory muscles are "directed against this resistance," whereas (2) this is not the case during the initial stretching of the child's lungs. I submit, Sirs, that the first of these propositions is irrelevant and that the second is untrue. 1. Pulmonary tension cannot exist except by the action of forces "directed against" it. It is impossible for the lungs to be stretched by any other means. How, I would ask, can Dr. Auld use this elemental fact to

controvert any of my contentions? 2. From the very moment the pulmonary tissue is first put on the stretch *in the smallest conceivable degree* the inspiratory muscles are "directed against" pulmonary tension, which can only come into being as a result of some force or forces thus directed.

I come now to the next point in Dr. Auld's letter. He writes in respect of passive recoil: "If Dr. Campbell *now admits* [my own italics] this factor to be alone competent to produce a certain degree of thoracic expansion," &c., thus suggesting that I have abandoned a position. In point of fact, I was the first to allude to this factor in connexion with the present discussion and have in each of the previous letters in the most precise language of which I am capable maintained its competence to cause thoracic expansion.

In my last letter I argued that Dr. Abrams's contention that the pulmonary margins may by reflex dilatation be made to extend further downwards than by voluntary inspiration must be erroneous, seeing that in the latter way they can be brought to the uttermost confines of the pleuræ, further than which they cannot go—so long, of course, as the pleuræ remain intact. Dr. Auld does not admit the cogency of this argument; he believes it "can be disposed of without much difficulty." He quotes Cunningham to the effect that the pleura does not in ordinary circumstances "dip down to the bottom of the narrow interval between the thoracic wall and the diaphragm," and argues that "after the pleural cavity is fully filled by the lung there remains an interval into which the lung can be stretched." Here Dr. Auld brings out a fact—certainly of great interest—i.e., that the lower confines of the pleuræ are not stationary; but how does this affect the validity of my statement that the lungs cannot pass beyond the confines of the pleura? Whether those confines are fixed or moveable is altogether beside the question. Were my body imprisoned in a vast pleural sac would it be possible, so long as the sac remained intact, for me to pass beyond its uttermost confines, be the sac stretched never so much? But observe into what further impossible position Dr. Auld lands himself. He is all the while implying that while by a deep voluntary inspiration the lungs can only be made to travel as far as (what we may call) the usual confines of the pleuræ, these organs, when relaxed by reflex dilatation, can be made to stretch the pleuræ so that the latter shall extend downwards beyond their wonted limits and, moreover, that all this can be effected by a passive outward recoil of the chest walls! That such can be the case is to me as inconceivable as that the whole is greater than its parts.

Regarding Dr. Albert Abrams's letter (Dec. 19th, p. 1756), I would repeat that I have never denied the existence of a pulmonary reflex of dilatation. I have simply sought to show that much at least of the evidence adduced by Dr. Auld in proof of its existence is open to criticism. Nor do I regard as conclusive the evidence which Dr. Abrams brings forward in favour of the existence of a "counter reflex of lung contraction." He tells us that if the chest be concussed in a certain way there is induced for a few seconds a (local) area of dulness together with a darkening (as shown by the Roentgen rays) in the corresponding region. Dr. Abrams concludes that these phenomena are due to a localised lung contraction. For myself I cannot explain them, but I would raise the question whether they may not be quite as satisfactorily explained on the assumption of a changed condition in the chest wall as on that of changes in the underlying lung. I am not, it is true, able to say how the chest wall can be altered by concussion so as to induce the phenomena in question, but there seem to me to be grave difficulties in the way of referring them to a pulmonary causation. Dr. Abrams postulates a momentary contraction of a limited pulmonary area sufficiently pronounced to cause a local darkening in the fluoroscopic picture and a local area of percussion dulness. Such a contraction could only be induced, so far as I am able to judge, by a primary contraction of the alveoli themselves leading to their complete, or all but complete, obliteration, and the question arises whether such an event is possible. It is true (if I remember aright) that unstriped muscle fibres are found in the alveolar walls, but if the vesicles are susceptible of such extreme contraction it is a fact new to physiology. I need scarcely point out that of the pulmonary tubes the only ones capable of completely shutting off all access of air to the alveoli are the bronchioles. Now even if we suppose that in the area of fluoroscopic darkening the bronchioles are completely obliterated, this does not by any means imply collapse of the air-vesicles belonging to them. Quite the opposite effect, indeed, would be induced, for the contracting bronchioles would drive some of their contained air onwards into the vesicles; moreover, by so much as the tubes diminished in their volume by just so much would the volume of the vesicles tend to increase, so that the related vesicles would actually increase in volume and in the tension of their walls; pointing in the same direction is the further fact that in spasmodic asthma, an affection avowedly due to narrowing of the tubes, the lungs expand, while the chest becomes *hyper-* rather than *hypo* resonant.

May I, in conclusion, Sirs, introduce an entirely new consideration regarding the question of a lung reflex? One of the contentions of Dr. Abrams and his disciples is that by stimulating a limited part of the chest wall the subjacent lung can reflexly be made to expand, so that when, e.g., the præcordium is stimulated the pulmonary margins near the heart will move more extensively than those more distantly situated. Now I would point out in this connexion that inasmuch as pulmonary tension tends to be equal in all parts of the lung, when a limited area of pulmonary tissue is relaxed the remaining more tightly stretched portions will drag upon the relaxed portion until it is stretched in an equal degree with them, a circumstance which must tend to prevent the pulmonary margins moving more in the region of the area reflexly affected than in other parts.

I am, Sirs, yours faithfully,

Wimpole-street, Dec. 27th, 1903. HARRY CAMPBELL.

THE BORDERLANDS OF INFECTIOUS DISEASES AND THEIR MANAGEMENT.

To the Editors of THE LANCET.

SIRS,—I certainly resented, and do still resent, the language used by Dr. C. Dukes in his letter dated Nov. 14th. His words imputed apathy and callousness to all those who like myself have to do with the management of fever hospitals and implied that little, if any, attention had been paid to what I have elsewhere termed "isolation within isolation"—the provision in fever hospitals of quarantine and observation rooms. Dr. Dukes in that letter made no distinction between one fever hospital and another; the responsible managers of all were included in one sweeping condemnation. Therefore I resented, and I think I may say justly resented, the attack he made; nor, in my opinion, has he in his last letter added anything to justify his action.

With respect to the hypothetical instance put to me by Dr. Dukes, curiously enough he has succeeded in imagining a very out-of-the-way case. In the first place, it is very unusual for equivocal cases of scarlet fever resembling diphtheria to be sent to hospital as scarlet fever, so that such cases do not get sent to the diphtheria wards. Secondly, supposing that such a case did resemble diphtheria and was sent to the diphtheria wards, strange as it may seem, the chances of the patient getting diphtheria are very remote. The most likely occurrence would be, not that the particular equivocal case would contract any second infection, but that some of the other patients in the ward would catch scarlet fever. I have no desire, however, to shirk the question and I will take the case of a child who, admitted to hospital with one disease, contracts another, from which he dies, and I suppose that this is the sort of case that Dr. Dukes really means. As to whether the use of strong language is necessitated or justified depends entirely upon the circumstances. The occurrence may or may not be the fault of the hospital authorities. What I resent is that Dr. Dukes assumes that it is always and everywhere their fault, whereas I assert that the reverse is the case.

I must thank Dr. Dukes for the candour with which he has admitted that his experience of infectious diseases is limited, for he has informed us that it has been confined principally to observations on cases that have occurred during a period of several years in a school of 700 males between the ages of nine and 19 years, these males, moreover, being members of the well-to-do classes of society. I need hardly point out that the bulk of cases of infectious disease (except typhoid fever and nowadays small-pox) occur in children under ten years of age and of the poorer classes, and that it is in young children rather than adolescents that they appear in their protean and severe forms. So I can quite understand how it is that Dr. Dukes has never come across any of the

cases described by Dr. H. E. J. Biss under the term "borderland." The description given by Dr. Biss of these cases is accurate enough; they are quite familiar to those of us who have had the opportunity of studying infectious diseases in large cities. I am, Sirs, yours faithfully,

Homerton, Dec. 27th, 1903. E. W. GOODALL.

To the Editors of THE LANCET.

SIRS,—Dr. Clement Dukes, in his letter dated Dec. 18th, writes: "I regret that I am not prepared to follow the lead of Dr Biss and support Dr. C. K. Millard in his proposal for an inquiry into fever hospitals, inasmuch as his aim is to end these valuable institutions, whereas mine is to mend them."

Allow me to say that Dr. Dukes scarcely represents my attitude correctly. It may be true that some have condemned isolation hospitals as being radically wrong in principle and have advocated their entire abolition, but I have never gone so far as this. I have carefully avoided condemning isolation hospitals *in toto* and have purposely restricted myself to asking for an inquiry. Moreover, I have confined myself to the case of a single disease—viz., scarlet fever.

Of course, in order to make out a case for an inquiry I have had to call attention to certain facts which undoubtedly appear to tell strongly against hospital isolation. Thus I have pointed out that it is very difficult, if not impossible, to find any satisfactory evidence that fever hospitals, as worked in the past, have done any real good. On the other hand, I have adduced some evidence which suggests that they may to some extent have actually done harm. I have called attention to the baneful influence of "return cases" and to the dangers of cross infection, &c. I have also tried to show that it is much more practicable to treat scarlet fever at home than is usually supposed. But all this has been urged avowedly as ground for an inquiry. If the indictment makes the case for hospital isolation look rather bad that is scarcely my fault. It only shows how desirable it is that an inquiry should be held. It is surely as unjust to accuse those who ask for an inquiry into the working of isolation hospitals of wishing to put an end to them as it would be to accuse a bench of magistrates of wishing to get a man hung whom they had committed on a capital charge. As Dr. Biss has well said, if isolation hospitals will bear investigation they have nothing to fear from an inquiry and they will emerge from the ordeal more firmly established than ever. If, on the other hand, they will not bear investigation, then the sooner a full and searching inquiry is held by some competent body the better it will be. This is so obvious that it is really extraordinary that such an inquiry was not held at once when the utility of isolation hospitals was first challenged some years ago.

As a matter of fact, Dr. Dukes, although he says he is unable to support the proposal for an inquiry, is almost as sweeping in his condemnation of isolation hospitals as anyone I know. In his first letter[1] he wrote: "The sooner, then, isolation hospitals, which apparently are not isolation hospitals but disease-developers, are mended or ended, the more creditable will it be for us as a profession and the safer will they be for the public."

It is true that he proceeds to give what he believes to be the remedy, but, even though he may be right in this, it is scarcely likely that the mere opinion of one man will carry very much weight in a great question such as this is, and the evils of which he complains will almost certainly continue. Dr. Dukes rightly says that "the question of the influence of fever hospitals is a burning one at the present time." In other words, very great difference of opinion exists amongst experts as to what the influence of fever hospitals really is. Certainly a very great change in opinion has taken place within the past few years. When the movement against isolation hospitals was first started by Mr. E. D. Marriott of Nottingham some five years ago it was treated with indifference and contempt, if not with ridicule. The value of isolation hospitals had been so completely taken for granted that few had taken the trouble to inquire into it. Now, however, it is very different. Several medical officers of health of high standing and others well qualified to form an opinion on the subject have expressed themselves as being very doubtful as to the wisdom of the policy which has hitherto been pursued as regards hospital isolation. Others are looking into the subject *de novo*, whilst very few, I think, would now be prepared to speak dogmatically about the "enormous and undoubted value" of fever hospitals as was formerly the case.

But, unfortunately, whilst all this uncertainty and doubt is steadily increasing, fresh hospitals continue to be built on the old lines at great expense, out of loans which will have to be repaid by the ratepayers of the future. Whether they will commend us for our legacy of debt is another matter. It is for this reason that some of us regard this question as one of urgency and think it desirable that the whole subject of hospital isolation should be fully and thoroughly investigated, by special commission or otherwise, with as little delay as possible.

I am, Sirs, yours faithfully,

Town-hall, Leicester, Dec. 28th, 1903. C. KILLICK MILLARD.

[1] THE LANCET, Nov. 28th, 1903, p. 1529.

To the Editors of THE LANCET.

SIRS,—The article by Dr. H. E. J. Biss on the Borderlands of Diphtheria and Scarlet Fever, together with the subsequent correspondence aroused by it in your columns, illustrate one of the difficulties constantly experienced in the administration of isolation hospitals. I have for years, doubtless in company with other medical officers of health, pinned my faith on the isolation hospital as one of the chief factors for the prevention of scarlet fever. I accepted the dicta of the leading public health authorities, backed as they were by the Local Government Board, on the value of the isolation hospital without hesitation and without criticism; the theory seemed to me sound and if I did not get the results hoped for I concluded the fault must lie in some unrecognised conditions which would in due course be explained and remedied.

In recent years, however, articles by Mr. E. Dean Marriott and Dr. C. Killick Millard have caused me to investigate the subject more carefully for myself. Mr. Marriott has expressed the opinion that isolation hospitals, so far from limiting the disease, actually tend to increase its prevalence. Dr. Millard, basing his opinions on statistics collected from all the large towns of the kingdom, showed that towns isolating only a few of their scarlet fever cases in hospital suffered no more, and often not so much, from that disease than those towns which went to the expense of isolating 70, 80, or 90 per cent. of the cases. Now, neither Mr. Marriott's nor Dr. Millard's arguments have been refuted. Dr. Millard's paper was read before the Incorporated Society of Medical Officers of Health, a body of men who were above all others qualified by their experience to correct and detect any fallacies in his arguments. The only serious attempt to controvert his facts was made by Dr. J. R. Kaye who produced a laboriously constructed paper in which, however, he was only able to detect a trifling error in one set of Dr. Millard's figures.

As medical officer of health of one of the large towns I have had the opportunity for some years of studying the effect of isolation hospitals in controlling scarlet fever, and I confess that the result of my observation has been such that I have felt compelled to advise my authority against further expenditure in this direction. Further, while there may not at present be other medical officers of health who have gone so far as this, yet I feel convinced that there are numbers who are much exercised in their own minds on this question. The fact that isolation hospitals have failed to accomplish what was sanguinely anticipated at their inception will not, I think, be denied even by their most enthusiastic supporters. What, then, is the reason for this failure? Is it, as maintained by some, due to the faults of administration, or are the theories, upon which the success of the system depends, at variance with the actual facts as they occur in practice? For in connexion with this latter alternative it must not be lost sight of that although the isolation hospital for the control of scarlet fever has been in vogue for 20 years or more its general employment throughout the country was not based on the result of experience but upon theory. In support of this theory millions of money have been expended—in fact, neither money, time, nor trouble has been spared to render the isolation hospital a success.

Now, Sirs, it seems to me very desirable, in the interest not only of the medical profession but also of the public, that an inquiry into the subject should be instituted, and I believe you would be rendering a marked service if you would open the columns of THE LANCET with a view to ascertaining the opinions of medical men on this matter.

After all these years there must be a mass of evidence obtainable, the careful consideration of which by an authoritative body of men should result in a report which could not fail to be of immense value. Possibly such a report would find that the isolation hospital was not so beneficial as is generally conceded; on the other hand, it might indicate improved methods of administration whereby the usefulness of such institutions could be greatly enhanced. In any case such an inquiry can do no harm and, in view of the diversity of opinion on the effect of the isolation hospital in controlling scarlet fever, appears to me eminently desirable.

I am, Sirs, yours faithfully,

A. MEARNS FRASER, M.D.,
Medical Officer of Health, Portsmouth.

Portsmouth, Dec. 22nd, 1903.

WATER-CRESS AND TYPHOID FEVER.

To the Editors of THE LANCET.

SIRS,—I have read with interest the admirable report of Dr. J. King Warry on an outbreak of typhoid fever in Hackney in June last and also your editorial comment in THE LANCET of Dec. 12th, p. 1671, and lastly the criticism of Dr. William Bruce in THE LANCET of Dec. 26th, p. 1834. May I say at once that in my opinion Dr. Warry's conclusions appear to be amply justified by the facts he has collated and that Dr. Bruce's criticism appears to me to be an apt illustration of a logical fallacy.

Dr. Bruce says: "If eating water-cress was the real reason of the outbreak surely the first evidence would require to be that *everyone* attacked partook of the article in question." (The italics are mine.) How can Dr. Bruce advance this argument when he believes (as, indeed, all persons with any considerable experience of typhoid fever *know*) that the disease is frequently "spread by infection from person to person." Surely the earlier cases in Hackney may have been infected by the polluted water-cress while some of the later cases may have been cases of personal infection and yet some of them indirectly attributable to the infected water-cress. Considering the various channels by which the typhoid bacillus may reach the alimentary canal it is preposterous to advance the view that everyone attacked should have partaken of the suspected article. Some of the cases were probably quite independent of the water-cress. I do not suppose for a moment that Dr. Warry suggests that the whole of the cases were traceable to the polluted water-cress but merely that that infected article was the origin of the excess of typhoid fever in June, 1903, as compared with the average June incidence in previous years.

Dr. Bruce does not seem able to grasp how one sample of water-cress may be infected and another innocuous, even though both may be obtained from the same polluted source. In the first place, typhoid bacilli are particulate matter in suspension (and *not in solution*) in the contaminated water; they are not, therefore, present in every drop or cubic centimetre, or even litre, of the contaminated water; hence *only portions* of the water-cress growing in the sewage-polluted stream become contaminated with typhoid bacilli. In the second place, even an infected portion of water-cress may be rendered innocuous by being very thoroughly washed under a running tap. Some persons are more careful and cleanly than others and wash their water-cress more thoroughly. Such persons may thus get rid of the particulate pathogenic bacteria by the mechanical force of a stream of water. Dr. Bruce again says: "The specific bacillus has never once been demonstrated as present in any single sample of suspected water." Though I would be extremely cautious as to the use of the word "never" it may be granted that it would be quite exceptional to find the typhoid bacillus in a suspected water. Has Dr. Bruce never reasoned as to why this is so?

I have already shown above that not every litre of a contaminated water would necessarily contain a few particulate bacilli, while most bacterioscopical examinations of water are carried out with only fractions of a cubic centimetre. Apart from this consideration it is a question to be decided whether the specific pollution of the water is a continuous pollution or was of a past and temporary nature. More often it is the latter and by the time that cases of typhoid fever have arisen in sufficient numbers to cause suspicion to be attached to a particular water-supply several weeks have probably elapsed since the date of specific pollution. It is therefore not a matter for surprise if the specific bacillus is not to be found, but if the bacterial examinations afford ground for suspecting the presence of sewage pollution (even if the specific bacillus is not isolated from the small quantities which only can be plated out) the likelihood of the suspected water being the probable vehicle of the poison is greatly strengthened.

Again, as regards shell-fish from polluted layings it is by no means every shell-fish which becomes infected with the particulate specific bacteria but only such as happen to imbibe a particular portion of infected water as it passes. The typhoid bacillus *has been isolated* by Klein from polluted shell-fish but the majority of the shell-fish examined from the same layings revealed only some of the more common sewage bacteria. All, however, are potentially dangerous. Just so with water-cress from polluted streams: all is not actually infected with the specific germ but all must be considered as potentially dangerous. That secondary infection from previous cases is under-estimated I firmly believe and assert and on this point I am in agreement with Dr. Bruce.

In my annual report on the health of the borough of Southend-on-Sea and again in a paper which I read before the Royal Institute of Public Health at Liverpool in July, 1903, I have reiterated the following precautions which I think if followed would very greatly reduce what I term the "residual" typhoid fever in this country: 1. By avoiding the *touching* as well as the eating of all forms of shell-fish except such as are beyond any suspicion of pollution. 2. By avoiding the eating of any uncooked vegetables (such as water-cress) which have been subjected to manurial or sewage pollution. 3. By the early removal to hospital of any case of typhoid fever which may occur (a large proportion of cases are secondary consequent upon the nursing of patients by untrained relatives). 4. By careful and constant attention to effective sewage schemes and to frequent and effective disposal of trade and house refuse, &c. 5. By all forms of cleanliness, which must apply particularly to our water-, milk-, and other food-supplies and more particularly to shell-fish and water-cress than hitherto. To these I may add another which I mentioned in my annual report for 1901. 6. The routine administration to typhoid fever patients of urotropin before they pass from professional observation. Yet a seventh preventive measure is—Warning convalescent patients of the possibility of their excreta being infective for a considerable time after recovery and instructing them in simple methods of disinfection and other precautions to be observed.

I am, Sirs, yours faithfully,

J. T. C. NASH, M.D. Edin., D.P.H. Camb.,
Medical Officer of Health, Borough of Southend-on-Sea.

Dec. 29th, 1903.

THE TREATMENT OF CERTAIN FORMS OF OBSTINATE CONSTIPATION BY ENTERO-COLOSTOMY.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 12th, 1903 p. 1673, I notice that you mention a new method of dealing effectually with cases of intractable constipation which has been devised and successfully carried out by Mr. W. Arbuthnot Lane. At a meeting of the Medical Society of London on April 22nd, 1901, I read a paper on a precisely similar case in which I had successfully performed the same operation in October, 1900. I saw the patient a year later and am glad to say that the operation (it was the fourth occasion on which laparotomy had been performed upon her) had completely relieved her of her symptoms. I am, Sirs, yours faithfully,

Wimpole-street, W., Dec. 24th, 1903. C. MANSELL MOULLIN.

THE SIMULTANEOUS OCCURRENCE OF TWO ACUTELY DEVELOPED CUTANEOUS LESIONS.

To the Editors of THE LANCET.

SIRS,—The interesting case of concurrent psoriasis and erythema nodosum described by Dr. H. W. Syers in THE LANCET of Dec. 19th, p. 1718, furnishes yet another illustration of the principle of co-existence in diseases of the skin. The possibility of the development of two, or even more, acute cutaneous disorders side by side is one which is very apt to be overlooked clinically, but it is a fact that this association occurs more frequently than is generally

believed. I have been accustomed to divide the cases into those of: (1) natural—i.e., causally related; and (2) accidental association. As an instance of the former may be mentioned the acute development of alopecia with a seborrhœic dermatitis upon the trunk, while as an illustration of the latter I may refer to a case which I have described in detail elsewhere[1] of a man, aged 40 years, who came to the skin department of the Tottenham Hospital suffering from an acute attack of psoriasis. Within a short time he developed an eruption of secondary syphilis which was perfectly distinct and separate from his psoriasis, his skin presenting a most unusual spectacle. Curiously enough, it is psoriasis, the "disease of the healthy," which most often co-exists with other independent cutaneous affections and it is generally the one first in the field, the second disease appearing shortly after its efflorescence. Syphilis, purpura and leprosy have all been observed to co-exist with psoriasis, but, with the exception of the first, they are rare. In Dr. Syers's case the erythema nodosum appears to have developed quite simultaneously with the psoriasis. Although there was no history of rheumatism in the case, yet it will be admitted that the concurrence of two such cutaneous disorders, both of which are so frequently associated, directly or indirectly, with that disease would form a strong reason for treating such a case with salicin or the salicylates. As was originally pointed out by Dr. Radcliffe Crocker, these remedies often exert a favourable influence upon the course of psoriasis alone. Regarded from the diathetic standpoint Dr. Syers's case would fall into the category of my first group—namely, those concurrently developed acute cutaneous disorders which are "naturally" associated through a more or less causal relationship.

I am, Sirs, yours faithfully,

G. NORMAN MEACHEN, M.D., M.R.C.P. Lond.

New Cavendish-street, W., Dec. 18th, 1903.

MALIGNANT GROWTHS AND NORMAL REPRODUCTIVE TISSUES.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Dec. 26th, p. 1830, you give a very full account of the interesting paper recently communicated to the Royal Society by Professor J. B. Farmer, Mr. J. E. S. Moore, and Mr. C. E. Walker in which they dwell on the resemblances between certain of the cells of malignant growths in man and those of normal reproductive tissues, and from which resemblances they draw the conclusion that the malignancy of these tumours is intimately connected with the reduction of the normal somatic cells into reproductive or germinal tissue. To me this communication is of special interest as I have already put forward a similar view in my paper on Inoperable Mammary Carcinoma read before the Edinburgh Medico Chirurgical Society in May, 1893, and published *in extenso* in THE LANCET of July 11th and 18th of that year. I there say, when dealing with the etiology of cancer, that "in whatever way brought about there seems to me a reasonable ground for thinking that the active processes seen in a cancerous tumour are best explained by regarding the epithelium of the part as having taken on the properties and powers of the germinal epithelium." I further expressed the belief that the special cells seen in sections or scrapings of cancer and known as "cancer bodies" may eventually be shown to be special germinal cells corresponding to the ovum cells elaborated by the ovary in the female and by the testis in the male.

While Professor Farmer and his coadjutors seem to have come to the same conclusion as the result of their microscopical inquiry I did so clinically and chiefly in consequence of the results obtained by oöphorectomy in inoperable mammary cancer. Under that procedure cancerous activity has been arrested and proved cancerous tissue has disappeared with, in addition, diminution of pain and improvement in the general health, a state of matters that has never before been observed in this disease under any other medication and that, too, in advanced cases of the malady. In writing thus I am not giving only my own individual experience. Other surgeons have observed the same results. Unfortunately, I think, the profession has regarded this method of treatment from a therapeutic aspect only and judged it solely by the standard of its value as a *curative* agent. This is, of course, quite right, but whatever be the final decision on this point I would fain hope that the effects following oöphorectomy will not be lost sight of, especially as we are dealing with a disease the true nature of which has, so far, baffled inquiry. To cause cancerous tissue and cancerous glands to disappear is a very remarkable fact and one that should have more importance attached to it than it has yet had, for I look upon it as furnishing a clue to the real nature of cancer and as strongly confirmatory of the opinion I expressed in May, 1896, "that the disease consists in the epithelium of the part affected taking on the active proliferation which is the marked characteristic of the germinal epithelium." The observations of Professor Farmer and his coadjutors seem to support this view of mine, which, however, was arrived at by a different line of inquiry.

I am not sure that Professor Farmer and Mr. Moore and Mr. Walker are altogether correct in the statement they make as to the exact mode of development of the special cells to which they give the term "gametogenic," but a letter such as this is not the place to go into such a question. The mere establishment of the presence of such cells in malignant tissue is a point of the greatest importance and strongly corroborative of what I may call the *germinal-cell theory* of cancer.

I am, Sirs, yours faithfully,

Glasgow, Dec. 27th, 1903. GEORGE THOS. BEATSON.

[1] Medical Press and Circular, vol. i., 1902, p. 773.

THE LATE FLEET-SURGEON KIRKER, R.N.

To the Editors of THE LANCET.

SIRS,—In the sympathetic notices of the late Fleet-Surgeon Gilbert Kirker no mention seems to have been made of that officer's work on the effects of the modern rifle bullet of small bore. Dr. Kirker's observations were communicated by the late Professor T. Longmore to the Section of Military Medicine and Surgery of the International Medical Congress of 1881 and have since lain buried in the ponderous volumes of the Transactions of that meeting.[1] A careful study of his paper, entitled "A Comparison of the Cylindro-conoidal and Round Bullet Wounds," would have rendered many of us less free in the expression of surprise at the results of the modern bullet wound as observed in the late war. The late Dr. Kirker, I know, felt that his work had scarcely obtained the recognition it deserved and it seems only right that, although late, attention should be drawn to his pioneer work in this direction.

I am, Sirs, yours faithfully,

Dec. 30th, 1903. G. H. MAKINS.

[1] Transactions of the International Medical Congress, 1881, vol. ii., p. 578.

THE FUNCTIONS OF THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—In reference to your frequent allusions to rampant quackery, is it not possible for the General Medical Council to take some practical steps for the protection of the medical profession and the public? No doubt the Council's work is good as far as it goes but I express the feeling of many other medical men when I say that we think the professional needs of our class do not receive adequate attention. You say in your section of the Annus Medicus dealing with the Council that the preliminary education of the student and the consideration of penal cases have absorbed all the time that the Council can afford to give to its deliberations. In that case Parliament should grant a subsidy to the Council, for it is clear that other subjects remain for discussion and no less clear that there are abuses to be reformed.

I am, Sirs, yours faithfully,

Dec. 28th, 1903. M.D. CANTAB.

*** Our correspondent will find his question dealt with in a leading article on p. 37.—ED. L.

THE UNIVERSITY OF LONDON AND MEDICAL EDUCATION.

To the Editors of THE LANCET.

SIRS,—Your leading article, which appeared under this title on Dec. 19th, 1903, sufficiently indicates the great educational work which lies before the reconstituted University of London as well as the extreme importance of that work to the medical profession.

While congratulating the University of London upon the

substantial progress it is making towards improving the conditions under which its undergraduates will in the future study for degrees in medicine, medical men, whether members of the corporations or not, must all regret that there are no indications that the Royal College of Physicians of London and the Royal College of Surgeons of England are sufficiently alive to the necessity of keeping pace with educational progress. The attempt now about to be made to improve the courses of study and examinations in preliminary science for their conjoint diploma has been so long delayed that the Colleges will not get due credit for it. The antipathy of the Colleges to accede to any outside influence or to modify any of their existing regulations causes almost despair as to any ultimate agreement between these bodies and the University with the object of lessening the number of examinations to which the unfortunate London student of medicine has now to submit. It is much to be hoped, however, that a further attempt in this direction may still be made. It is true that the Colleges have reported adversely to the proposal to endeavour to secure concerted action with the University in the conduct of examinations. This decision was arrived at, however, before the Faculty of Medicine had resolved to advise the Senate to endeavour to enter into negotiations with the Colleges for this specific purpose. The Colleges I should hope may be relied on to consider favourably a definite proposal emanating from the Senate. Every forward step taken by the University makes it more evident that if the Colleges hold aloof from the University they must surely and steadily lose ground as a controlling influence upon medical education in London. The Colleges have in the past done their best to compensate the London student of medicine for the absence of a teaching university in this city. It should not be beyond the power of senators and councillors to arrange for these ancient corporations and the modern university to work shoulder to shoulder to their mutual honour and to the advancement of London as a centre of medical education and research.

The removal to a central institution of facilities for instruction in preliminary or ancillary sciences will not deprive our hospital schools of their prestige. It will rather give them opportunities for using to the advantage of their students the unrivalled clinical material provided by their crowded wards. The medical schools proper of the metropolis will be the gainers if the scheme of concentration advanced by Lord Rosebery and his colleagues receives support. The fact that King's College Hospital proposes to move to a site a long way distant from the College where its prospective students will study anatomy and physiology, is an object lesson which should prove to the governors of other hospitals that dissecting rooms and physiological laboratories are not necessary adjuncts to the wards of a hospital in which medical education is conducted.

I am, Sirs, yours faithfully,

Dec. 30th, 1903. PHYSICIAN AND TEACHER.

THE ASSURANCE OF UNDER-AVERAGE LIVES.

To the Editors of THE LANCET.

SIRS,—I will try to meet Dr. R. L. Guthrie's suggestion in his letter in THE LANCET of Dec. 19th, 1903, p. 1758, and throw some little light on the question of extra premiums as affected by the different scales on which the normal whole life assurance premiums may be paid. Extra risks have already been roughly classified under three types: (1) those of a *decreasing* or *immediate* nature, such as, e.g., arise from a consumptive family history or a past illness the complete recovery from which may be doubtful; (2) those which operate more or less *uniformly* throughout life, e.g., the risk of death by accident in the course of a hazardous occupation; and (3) the category of *increasing* or *deferred* risks, under which I suppose would be classed those of a gouty or cancerous nature mentioned by Dr Guthrie.

In the absence of statistics showing the actual incidence and distribution of the several types of extra risk one has to fall back on hypotheses more or less arbitrary. I have taken the Institute of Actuaries (H^m) Table and increased the annual death rates as follows: firstly, by an addition of 1 per cent. per annum for the first ten years of assurance with normal rates thereafter to correspond roughly with type (1); secondly, by a uniform addition of ½ per cent. throughout life, giving a whole-of-life extra practically equal in amount to that in the first case; and thirdly, by an addition of 1 per cent. at the ages between 40 and 50 years with normal rates between 30 and 40 and after 50 years, by way of a rough approximation to type (3). The resulting extras for three different scales of premiums are as follows:—

AGE AT DATE OF ASSURANCE 30 YEARS.

	Whole life.	20 payments.	10 payments.
Type (1), Decreasing extra Risk.	£ s. d.	£ s. d.	£ s. d.
Sub-normal	2 5 2	3 5 9	5 7 6
Normal	1 17 8	2 15 3	4 12 6
Extra	0 7 6	0 10 6	0 15 0
Type (2), Uniform Extra Risk.			
Sub-normal	2 5 2	3 4 3	5 5 0
Normal	1 17 8	2 15 3	4 12 6
Extra	0 7 6	0 9 0	0 12 6
Type (3), Increasing Extra Risk.			
Sub-normal	2 1 8	3 0 0	4 18 6
Normal	1 17 8	2 15 3	4 12 6
Extra	0 4 0	0 4 9	0 6 0

These results bear out my remarks that in general the whole of life extra requires to be increased for a limited payment scale—that is if my arbitrary modifications from which the results are derived are admitted to correspond roughly with the recognised types of extra risk. Type (3) requires the smallest surcharge for an extra risk of similar aggregate amount to the others, and the deferment of the risk has a decided tendency to reduce the 20 payments extra to the level of the whole life extra. This does not hold good, however, in the case of a less number of payments; in other words, such a rule as "the higher the rate of premium the lower the extra" would not seem to be theoretically sound. The principle is rather the reverse under each type.

I must point out, however, that these results are not new. They were brought out in a valuable paper read in 1884 by Mr. F. W. White, F.I.A., and Mr. J. H. Whittall, F.I.A., before the Institute of Actuaries.[1] My own hypothetical tables are constructed on the same lines as those followed, much more elaborately, by those actuaries. They draw attention, I think for the first time, to the increased extras required on the higher scales and add: "We attach considerable importance to this fact, as the enhanced amount of the premium payable for a limited number of years not infrequently has the effect we believe of rendering the true bearing of the extra risk very obscure and, in some minds, of even hiding it altogether."

Of course, such discussions must be more or less academic until authoritative statistics of extra risk are compiled. Surely the time is not far distant when, as suggested by Mr. N. B. Gunn, the president of the Faculty of Actuaries, in his recent inaugural address, the life offices might extract the results of their experience of under-average lives, with a view to their being classified according to some well-considered system devised by actuarial in conjunction with medical skill. The difficulties in the way are undoubtedly great, but I hardly think they would prove insuperable. And any attempt to lighten the dark in which we stand at present in this matter of extra risks is to be desiderated.

I am, Sirs, yours faithfully,

Dec. 22nd, 1903. ACTUARY.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The System of Rapid Filtration of Water.—The Plague Mortality.—Original Research on the Origin of Plague.—The New Plague Policy in the Punjab.—The Insanitary Condition of Madras.

THE American method for the rapid filtration of water known as the Jewell system has been recently installed at the Kolar goldfields. It requires a subsidence basin, filter, mechanical washer, congu ant feed pump, and clear water basin. The water-supply for these fields is from the surface and the water is collected in a tank. Where there is available room it is difficult to see what advantage this system possesses over the slower ordinary process of sand filtration. It has not, I believe, been previously tried on any scale in

[1] Journal of the Institute of Actuaries, vol. xxiv.

India. The preliminary addition of alum to the water in the subsidence basin to the extent of at least two grains per gallon is generally considered a disadvantage. In Calcutta or Bombay, for example, something like two and a half tons of alum would have to be used daily.

The plague mortality for the week ending Nov. 28th amounted to 17,617—a slight decrease as compared with the previous seven days. For the corresponding week last year there were only 8915 deaths. The details are: Bombay city, 47; Bombay Presidency, 9791; Karachi, 8; Madras Presidency, 264; Calcutta, 22; Bengal, 685; United Provinces, 1819; Punjab, 1154; Central Provinces, 2051; Mysore, 673; Hyderabad, 792; and Central India, 975. The disease is rapidly developing again in Bengal, more particularly in the Patna district, but there are at present no signs of a recrudescence either in Calcutta or Bombay city.

After the existence of plague in the Bombay Presidency for seven years the Government has deputed two officers to devote themselves to the discovery of the relation of plague outside the body to the organism associated with the disease in its clinical aspect. Dr. J. A. Turner of Bombay has joined the ranks of those few who have recognised the inefficacy of the disinfecting measures hitherto adopted but he has also clearly pointed out that neither all the commissions nor other investigators have thrown light on the origin of the disease or on its control. The Government still keep silent upon the Mulkowal mishap.

The new plague policy for the Punjab also recognises the very doubtful value of disinfection. It is for the future to be but sparingly employed and then only when the people ask for it. The people are to use it themselves in their own way and simple desiccating stoves are to be made available. There is to be no restriction on the movements of the people and consequently there will be no road or rail inspections and as it is thought that the religious feelings of the people are opposed to the destruction of rats no expense will be incurred on this head. We may safely say that for this large province plague measures are to be abandoned and the disease will be permitted to follow its course absolutely unchecked.

The insanitary condition of Madras is again attracting the attention of Government. The conservancy of the city is put out to contract instead of being directly managed by the corporation. The Tinnevelly settlement of the city is particularly bad. It is here that paddy boiling is largely carried on, the liquid of which is no better than sewage. Government also calls attention to the water and the need for a pure and adequate supply. The drainage scheme is not yet completed.

Dec. 10th, 1903.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Musical Festival.

THE results of this triennial affair can now be estimated, as the final meeting of the general committee has recently been held, Earl Howe, the President of the festival, occupying the chair. From the musical point of view the critics seem to be agreed that it was a more successful performance than that of 1900, Elgar's *Apostles* having proved a very attractive piece of work. On the other hand, from the pecuniary point of view, the General Hospital comes off worse than usual and the sum handed over to it compares especially unfavourably with that of the last festival, when there was a larger surplus than at any other festival held under modern conditions. The falling off in revenue on this occasion is due to the smaller number of serial tickets subscribed for. The donations, on the other hand, have considerably increased; indeed, as will be seen from the statement, had it not been for this source of income there would have been but a very trivial sum to be handed over to the hospital. The total sum derived from the sale of tickets was £9786 5*s*. The donations and collections during and after the festival realised £3851 19*s*. 4*d*., and some minor items brought the entire receipts up to £14,007 11*s*. 1*d*. This amount is £1275 5*s*. less than the amount received in 1900. On the other hand, the expenses, which amounted to £9486 7*s*. 6*d*., were £212 17*s*. in excess of those of the previous occasion. The amount of the cheque handed over to the treasurer of the General Hospital was £4521 3*s*. 7*d*., from which it will be seen that the net profit to the hospital, apart from the donations and subscriptions, was under £1000.

Hospital Sunday.

The proceeds of this collection have recently been handed over to the representatives of the different hospitals benefiting by it. The General Hospital, the Queen's Hospital, and the amalgamated charities each have a year in turn and this year the last-named group has been the recipient of the sums subscribed. The total amount of the church subscription was £4493 1*s*. 11*d*., which is a record for the amalgamated charities; in fact, since 1859 this sum has only four times been exceeded, twice on the occasion of collections for the General Hospital and twice for the Queen's Hospital. The largest sum allotted to any single institution was £557 5*s*. 9*d*. which went to the Eye Hospital, and the smallest was £61 13*s*. 4*d*. which was the contribution to the Lying-in Charity.

Mentally Defective Children.

Mrs. Pinsent, chairman of the special schools subcommittee of the Birmingham education committee, has recently read a paper on the above subject before the Birmingham Branch of the British Child Study Association. Mrs. Pinsent called attention to the alarming amount of mental deficiency which existed and to the fact that it was increasing. This increase not merely affected the easily recognised cases of lunacy and imbecility but also a class of persons who could not be described as lunatics but who were yet mentally, and very frequently also morally, deficient. These persons were allowed to live in complete freedom, and so far as the law was concerned were supposed to be responsible for their own actions. Many of them were to be found in prisons and many of them in the wards of workhouse infirmaries. At present there were 335 persons described as feeble-minded and epileptic in the Winston Green Workhouse Infirmary. The problem that the lecturer wished the meeting to consider was that of the most humane and economical method of dealing with this class of persons. The first school for children of this class was opened in Germany in 1863. The results attained there were good, for a large percentage of the children turned out were capable of subsequently supporting themselves. In 1893 a class of a similar character was formed in Leicester, that being the first in the United Kingdom. Shortly afterwards work of the same kind was taken up in London and now a number of towns were provided with classes for mentally deficient children. One of the first difficulties met with in the organisation of such classes was the accurate definition of the kind of child who might reasonably be considered to be admissible to them. This question as to the standard of admission must always remain one of considerable difficulty, but the Act under which these classes were constituted was one which permitted of a fairly wide interpretation. According to the lecturer, all children for whom there was any hope at all were given a fair trial in these classes, while some who after admission to them had proved themselves to be very nearly normal children were drafted back again to ordinary schools. The work in the special classes was carefully planned to draw out and to develop any little intelligence which the children might possess. Very few accurate statistics had yet been recorded, but, so far as could at present be judged, the work of the special classes, though excellent as a beginning, did not go far enough. It failed in two important particulars. In the first place, when they left school the vast majority of the pupils were quite unable to support themselves, and in the next at the age of 16 years such children were allowed complete liberty of action and freedom from school or other constraint, although mentally they were not above, if equal to, the level of most children six or seven years of age. In Birmingham an "after-care" committee had been formed to, keep a record of every case that left the special classes, with a view of ascertaining (1) how many became wholly or partially self-supporting; (2) how many became morally responsible; and (3) how many had children. The analysis of the cases showed results which were not very encouraging and seemed to point to the conclusion that further and permanent provision was necessary for this class of persons. Out of 46 on the committee's books 18 were at work and earning an average weekly wage of 7*s*. 1*d*. and only eight were thought to have any chance of becoming self supporting. This amounted to 17 per cent. and showed that so far as the remaining 83 per cent. were concerned the work done in the special classes was not sufficient, in fact, did not go far

enough. Those who were concerned with the after-care of these children had come to the conclusion (1) that boarding schools should be provided for certain mentally deficient children; (2) that the city councils and boards of guardians should be asked to establish colonies to which these children could be drafted at the age of 16 years; and (3) that as in Birmingham there was no proper accommodation for idiot and imbecile children, it was necessary for the question of providing such accommodation to be placed before the proper authorities.

Staffordshire Consumptive Sanatorium.

This scheme, which has already been mentioned by me in a former letter, seems to be meeting with a good deal of opposition throughout the county. Lord Lichfield, who is chairman of the sanatorium subcommittee of the Staffordshire county council, has found it necessary to write to the chairmen of the different bodies who were called into conference and to point out that the county council has not at present any detailed scheme before it and that the object of the conference was to find out whether the various sanitary authorities would be willing for the council to prepare a scheme and to submit it to them. In the same letter he informs those to whom he writes that Colonel Wilkinson, who so generously offered a site near Lichfield for the sanatorium, has now withdrawn his offer and placed a sum of £2400 at the disposal of the county council in lieu thereof. The West Bromwich board of guardians has adopted a report in opposition to the scheme on the grounds that the erection and maintenance of the sanatorium would cost much more than was estimated. It also objects that the open-air treatment is at present largely experimental and that further developments might render it necessary to erect buildings quite different from those now contemplated. There were at present a number of excellent institutions near the sea and in other more favourable situations than could be found in Staffordshire where patients could be sent and skilfully treated for £1 7*s.* per week. Further, it points out that the board has recently provided wards for the special treatment of phthisis. And finally it states that a sanatorium has been provided for Worcestershire by voluntary efforts and that there does not appear to be any reason why Staffordshire should not provide one in a similar manner, since it is a much richer county than Worcestershire. At a meeting of the Stafford board of guardians a certain Major Johnson seems to have delivered himself of adverse sentiments with a more than martial boldness. He told the board that Dr. G. Reid the county medical officer of health, was a mere theorist and knew nothing at all about the practice that had been adopted in various sanatoriums for the prevention or cure of consumption. Even in localities which were suitable sanatoriums had been failures and the idea of setting up open-air treatment in a climate like that of Staffordshire was absurd. As to teaching persons anything about the treatment of the disease the patients would have a period of six weeks of discomfort and cold, and when they got home the first thing they would do, instead of carrying out the new system, would be to shut the doors and windows and to make themselves comfortable by warmth. Mr. Peach challenged Major Johnson's statements and in the end the whole question, together with the West Bromwich board's report, was sent to a special committee to report upon the same.

Dec. 29th, 1903.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Manchester Royal Infirmary.

AT the meeting of the infirmary board yesterday, it appeared that the chairman, Mr. John Thomson, had had a letter from Judge Parry "in reference to the practice of inquiring into the circumstances of patients." A committee has been appointed to go into the whole question of voluntary payments from in-patients and of investigating the circumstances of patients. The use and abuse of hospital charity is a very large and difficult question, so that the committee has plenty of matter to deal with.

Free Meals for School Children.

Whatever view may be taken of the free-meal question as a matter of political and social economy, there is not much doubt that thousands of poor children cordially welcome these "free imports" and are the better for them. During last year the Manchester school board supplied 140,000 free dinners, the cost of which has been met by subscriptions and by the proceeds from school concerts, jumble sales, and social parties organised by the teachers. Under feeding is one of the factors in the production of the stunted, weakly young men and girls characteristic of the working classes of our manufacturing towns, and these meals are good so far as they go. It is said that there is not much abuse of this charity, as all the cases are examined by the teachers and officers, and, moreover, it has always been found "that when distress diminished and the unskilled labourer found work again the demand for dinners diminished." Just now the city is pervaded by the Christmas spirit and though there is plenty of merry-making and social enjoyment among the well-to-do the abundant and widespread charitable work carried on with method and energy must do much to mitigate, for a time at all events, the increase of misery and privation that accompanies winter weather.

A Batch of Inquests.

Yesterday week five somewhat remarkable cases were inquired into by Mr. E. A. Gibson, the city coroner. The first was that of a soldier on furlough suffering from "a lump in the neck," apparently caused by a bad tooth, and an operation was necessary. Ether was used as an anæsthetic but he took it badly and before the operation was completed "he stopped breathing and artificial respiration was tried without avail." The next case was that of a girl, four years old, whose mother gave her a dose of saffron and whisky as she had been unwell. A tumbler half full of whisky was left on the table and the child got hold of it and drank the contents, dying the next day. The third case was one of hanging. In the fourth case a man bought "enough laudanum to kill five men" in the middle of the week and on the Saturday was found dead. It was supposed that he had taken it as the bottle was found empty, but no traces of the drug could be discovered post mortem and the medical attendant attributed the death to alcoholic poisoning. The next was that of a labourer who went into the engine room of some works "presumably" to dip a piece of cotton waste in some oil that had dropped from the engine. He became entangled in the machinery and was so terribly injured that he died after being taken to the Ancoats Hospital. A wire guard fenced the engine and he must have opened the door of it, though such action is forbidden by the rules.

Danger of Unprotected Fires.

We do not realise as we should the danger to child life, more especially among the poor, from the absence of fire-guards to the open grates almost always to be found in cottages. About a fortnight since Mr. Brighouse, the coroner for South-west Lancashire, spoke strongly on the subject at an inquest at Warrington on the case of a little girl, aged four years, who was burnt to death during the temporary absence of her mother. He stated that in the last three months he had had 11 similar cases and said it was useless talking to parents—that the only remedy was legislation. This was endorsed by the jury who added a rider to their verdict "that legislative action was necessary to make fire-guards compulsory."

Cremation in Manchester.

Although the prejudice against cremation is gradually breaking down and the mention of it does not now excite the horror often expressed in the early days of its revival, the Manchester Crematorium Company do not find their business increasing very rapidly. According to the report which was adopted at the recent annual meeting the crematorium pays its way but not very much more. The chairman expressed disappointment that they could not record any material increase notwithstanding the interest taken in the institution as evidenced by the income received from curious visitors, and he seemed to think it strange that "the gloomy impression created by the appearance of city churchyards" should not cause a "desire to have the remains of their dead reduced in a little over an hour into a pure white ash instead of leaving them to moulder for years in the ground, a source of danger to the living." They hope to transfer the crematorium to the corporation when public opinion has sufficiently ripened to make it possible. Cremation, with reason on its side, will have a hard fight before it vanquishes custom and sentiment.

Disused Mining Shafts.

The tragedy occurring recently at Hanley where a man

walking along the street suddenly disappeared down the shaft of a disused mine from the rotten cover breaking through has given food for thought over wide districts in Lancashire. There can be no doubt that in many of the villages, now grown into towns, there are forgotten shafts, covered with wooden beams over which earth has been thrown, that are dangerous death-traps. The stoutest timber under such conditions gradually becomes rotten. In some places in Lancashire steps are already being taken to learn the position of these old shafts and to make them safe. The Potteries are said to be honeycombed with old workings and the same applies to some districts in Lancashire.

Dec. 29th, 1903.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Tenement Houses of Dublin.

THE special correspondent of THE LANCET who came over here some years ago to report on the public health of Dublin furnished a startling and very unfavourable story of the condition of the tenement houses and slums of the city of Dublin. It has not been forgotten, for his Excellency the Lord Lieutenant recently expressed a wish to visit those houses and to see for himself how things really are. He was accompanied by the President of the Royal College of Surgeons in Ireland, who is chairman of the Association for the Housing of the Very Poor, and his first tour began on the afternoon of Dec. 18th, when he commenced to traverse the streets and to visit the houses in the poorest parts of the south side of the city. He went about incognito—in a cab—and left presents in the shape of Christmas hampers for those who seemed most destitute of food suitable for the festive season. The Countess Dudley did the same thing in the northern poverty-stricken districts and the Christmas presents which she distributed were kindly given by her own hands. The Irish poor—dirty as they are—can still appreciate such delicate acts of kindness.

The New Royal College of Science for Dublin.

Mr. Cheveuix Trench, the arbitrator appointed under the Public Offices (Ireland) Act of last session, commenced to sit in the Four Courts, Dublin, on Dec. 14th to hear the claims for compensation in respect of lands and premises on the west side of Upper Merrion-street, which it is proposed to acquire by the Commissioner of Public Works under the compulsory powers of the above Act as a site for the new College of Science and extension of the offices of the Department of Agriculture and Technical Instruction. The persons whose claims for compensation are now being dealt with are all medical men in practice in Dublin and the result of the arbitration is naturally a subject of interest to the profession here. The claims which they make for compensation vary from £7000 to £3000 and the court has been occupied in hearing evidence as to the value of their houses and premises since it began to sit. Each of them was represented by senior counsel, while the Attorney-General, M.P., and Solicitor-General, M.P., instructed by the solicitor of the Board of Works, appeared for the Crown. The gardens connected with those premises in Merrion-street are unusually long, each house including a ground area of 100 yards from back to front. The space of ground which the Government is about to acquire by Act of Parliament measures therefore about 100 yards square and is situated in the best and most healthy part of Dublin.

Dr. Steevens' Hospital, Dublin.

At a meeting of the governors of Dr. Steevens' Hospital held on Dec. 21st Dr. Robert L. Swan was coöpted a governor, Dr. T. Percy Kirkpatrick was appointed physician, and Dr. Henry Jellett was appointed gynæcologist.

Medical Events in 1903.

The past year will mainly be memorable for the great growth of the Irish Medical Association and for the determined stand made by the Poor-law medical officers to improve their present wretched position. The Irish Medical Association has not only greatly increased in numbers but new branches have been established all over the country and it has also converted itself into a medical defence association, so that medical men joining it who formerly were members of some of the existing medical defence associations will very likely resign their connexion with such organisations as the Irish association will do all in this direction—medical defence—that may be required. The other special event in the medical history of Ireland in 1903 was the King's visit and the opening of the new Royal Victoria Hospital, Belfast, an institution which is constructed on lines altogether unique and peculiar and which will probably form the forerunner of future types of hospitals. The working of the hospital is in every respect admirable. The Royal Commission on Irish University Education has led to nothing.

The New Maternity Hospital, Belfast.

The governors of the old Lying-in Charity have purchased a new site in a populous part of the city—namely, at the corner of Townsend-street—where they propose shortly to begin the erection of a new thoroughly up-to-date maternity hospital which will be of the utmost advantage to the students of the Belfast medical school.

The Treatment of Tuberculosis.

On Dec 28th two of the Local Government Board inspectors (Mr. R. Agnew and Dr. E. C. Bigger) held an inquiry in the union workhouse, Belfast, as to the proposed establishment of a sanatorium by the guardians at Whiteabbey, on the north-west side of Belfast Lough. The senior medical officer (Mr. Robert Hall) of the Belfast workhouse, gave evidence, as did the master, showing the congested state of that institution. Four years ago they had 85 tuberculous patients, now (Dec. 28th) they had 255. The air space in the union hospital was utterly insufficient. The total space available was 586,800 cubic feet; of this, 192,800 cubic feet were required for surgical cases, which left 394,000 for the remaining patients, which was 48 600 cubic feet short of the required accommodation, calculated at the lowest scale of 600 cubic feet per head, and of these patients 255 were tuberculous. The accommodation was altogether inefficient, being below what was known in any recognised hospital for such patients. Apart from the fact that tuberculous cases needed special treatment they were dangerous to other patients and their removal would give accommodation as per scale for twice their number of the healthy. The union hospital was at present overcrowded, and the premises known as the Abbey—Whiteabbey—capable of accommodating 60 patients, six nurses, a resident medical officer, and superintendent—which he had inspected, were considered by Mr. Hall to be suitable. He believed the statement that there were 4000 consumptives in Belfast was a low estimate. Further evidence having been given in support of the scheme, some opposition was offered by local residents and Mr. H. C. Manley, dispensary medical officer of the district in which the proposed sanatorium is to be located, in his evidence objected to the place selected as not being suitable on the grounds that the soil was cold and damp, the site was too low and too close to the village of Whiteabbey, it was exposed to east winds, the air was relaxing, and there was local prevalence of pulmonary tuberculosis (of the total number of deaths registered in his district this year—96—there were 50 from chest diseases). The inquiry stands adjourned until Jan. 18 h.

Dec. 29th, 1903.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Renal Opotherapy in Albuminuria.

AT the meeting of the Academy of Medicine which was held on Dec. 22nd a sensational communication was made by Professor Renaut of Lyons which affords grounds for thinking that many cases of albuminuria will in future be curable. The following are the conclusions which Professor Renaut has drawn from his researches. Extract of macerated kidney administered to patients suffering from renal insufficiency is one of the most active and most efficacious methods of medication hitherto employed. It restores the function of a waterlogged kidney more than does any other known means. It acts both quickly and surely even in cases where no preliminary depletion of the kidney, as by the application of leeches to the triangle of J. L. Petit, has been tried. The extract has a powerful diuretic action and when employed for a reasonable space of time it brings up the urinary output to the normal and maintains it at that level. Further, it has no harmful influence upon the affected

kidney. Among other advantages of this method of treatment it rapidly reduces the output of albumin by the kidney owing to its renewing the activity of the gland. It will even cause a disappearance of the albumin for a long period and so there is every chance that, the tubules of the kidney being given functional rest, the renal epithelium will be renewed, at least in those cases which are fairly frequent, in which such renewal is histologically possible. It is therefore, as Raphael Dubois discovered and demonstrated at one stroke, an antitoxic method of the first class. The antitoxin consists of the "preproducts" of the glandular secretion of the epithelial cells of the convoluted tubules and the important point ascertained by Dubois was that this antitoxin is not destroyed by the gastric juice. It is this fact which allows of the application of renal opotherapy. The kidney extract introduced into the organism per os exercises a real antitoxic effect. On the other hand, signs of slight poisoning may arise from its use such as pruritus, urticaria, miliary rashes, sweats, or, after it has been administered for a few days, slight gastric disturbance. Apart from these complications, however, Professor Renaut and his assistants have never seen any unpleasant effects due to the use of the extract. It produces its antidotal effect in a regular and progressive fashion, and under its use the arterial hypertension, Traube's "gallop rhythm," and the tendency of the heart towards a fatal passive dilatation successively diminish, provided that the extract be given for a sufficient period of time. This method of treatment should be begun at as early a stage of the disease as possible and it should not be substituted for other therapeutic measures but used as an adjunct to them. Its only inconvenience is the necessity of preparing the extract fresh every day. But this difficulty can be easily surmounted if it be considered that the object of the treatment is to save human life.

Total or Partial Hysterectomy for Uterine Fibroids.

At a recent meeting of the Society of Surgery M. Monprofit read a paper on the above subject. For himself he said that he was an advocate for total hysterectomy, as this operation had always been more successful in his hands than a partial operation and in the great majority of cases it offered no difficulty. He allowed, however, that when the patient was very feeble a partial operation was preferable for it took a much shorter time to perform. Myomectomy or simple removal of the ovaries also affects fibroids favourably. M. Pozzi was of a contrary opinion and considered that the partial operation was the operation of election, for it was more rapid and far less severe than a total removal. He said that total hysterectomy gave a mortality of 9 per 1000, while for partial hysterectomy the proportion fell to 4 per 1000. He also drew the attention of the society to his method of operating. Instead of dividing the neck of the uterus transversely, destroying what was left of the mucous membrane with the thermo cautery and then closing the peritoneum over the stump, he prefers to make a wedge-shaped cut in the pedicle. The two sides are then brought together and the mucous membrane is thus inclosed by thick tissues. The peritoneal cavity is then accurately closed and is protected from all infection. M. Rouvier did not approve of this modification but preferred a simple transverse section. The mucous membrane was then buried by sutures in the stump and the peritoneum was closed. Three other surgeons—M. Quénu, M. Schwartz, and M. Ricard—said that they considered that the question as to whether partial or total hysterectomy were the better might be considered as closed. In their opinion the total operation was no more risky than the partial.

A Healthy Parish.

During the week Nov. 29th–Dec. 5th of 1903 the parish (*quartier*) of St. Thomas Aquinas with a population of 26,116 persons had not a single death. During the same period the parish of Père Lachaise with a population of 51,832 had 31 deaths. In the latter parish there are only 15 medical men, or 1 to every 3000 inhabitants, while the former parish has 125 medical men, being about 1 for every 200 inhabitants. It must be remembered that the parish of St. Thomas Aquinas is a rich one and is nearly empty during the summer and autumn, all its inhabitants being at the seaside or in the country. It is therefore obvious that its 125 medical men have much less work than they would like.

A New Hospital.

M. Ambroise Rendu has just laid before the municipal council of Paris a plan for a new hospital for Parisians at Montmorency. Last year the municipal council decided on great schemes of hospital improvement and extension towards which it allocated a sum of some 40,000,000 francs. The chief object was to free the Paris hospitals from a crush of patients and to provide for those suffering from tuberculosis. In many of the hospitals tuberculous patients make up half the whole number treated and even at the Hôtel Dieu they form more than a third of the total number of patients. If, then, these tuberculous patients could be treated elsewhere the hospitals would have ample room for other patients. M. Rendu proposes that they should be treated at Montmorency on a site of 126,000 square metres which belongs to the Duc de Talleyrand Périgord. On this site could be built a hospital containing 1000 beds, the patients being housed in separate blocks. The duke asks 825,000 francs for the site. The hospital will be reserved exclusively for Parisians and no clinical teaching will be given.

Dec. 29th, 1903.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Professor Koch's Birthday.

On the occasion of the sixtieth anniversary of the birthday of Professor Koch the *Deutsche Medicinische Wochenschrift* has issued a Festival Number to which the leading bacteriologists of Europe have contributed. It commences with an article on Professor Koch's Life and Work by Professor Löffler of Greifswald, dealing especially with his researches on tuberculosis, cholera, malaria, rinderpest, and other diseases of microbic origin. Professor Metchnikoff and Professor Roux of Paris contribute an article on the Experimental Production of Syphilis in Anthropoid Apes. They have succeeded in infecting a female chimpanzee with syphilitic virus, a chancre developing about 25 days after the inoculation. A month later a squamous exanthema appeared on the thigh, the back, and the abdomen and disappeared after four weeks. The animal unfortunately died about 14 weeks after the infection from general pneumococcic invasion. Some of the discharge from the chancre having been inoculated into the penis and the thigh of another chimpanzee, the result was that chancres appeared in both places, together with a general swelling of the lymphatic glands. No secondary symptoms ensued; the chancre on the thigh healed but that on the penis persisted till the death of the animal which happened about 45 days after the development of the syphilitic symptoms. No symptoms of syphilis were found at the necropsy; the death was attributable to infection by a kind of influenza bacillus which was found in the internal organs. The next article of the series is written by Professor Ronald Ross, of the Liverpool School of Tropical Medicine, and deals with Professor Koch's work on malaria, with especial reference to his determination of the frequency of malaria in children and his proposals to immunise the entire population of a malaria district by the systematic administration of quinine. Professor Ross does not hesitate to claim for Professor Koch a high degree of merit in this question, especially against the pretensions of certain Italian *savants*. Professor A. Celli and Dr. de Blasi of the Hygienic Institute of Rome contribute a paper on the possibility of separating the toxic principle of rabies by filtration. A diluted extract of the brain and spinal cord of affected animals was passed through a Berkefeld filter with the help of an exhaust pump at the temperature of the room and from 0·25 to 0·5 cubic centimetre of the filtrate was injected into the dura mater of dogs and rabbits. Of 23 rabbits only three survived and of four dogs all died. Of the 20 rabbits five died in from 14 to 40 days with symptoms of emaciation and paralysis. An emulsion of the medulla of these rabbits was accordingly injected into another series of rabbits, the results being that of 12 animals 10 died; of a third series of 12, 10 died, but only a few had symptoms of paralytic rabies. The four dogs died in from 19 to 88 days, showing general emaciation and depression. The necropsy of the deceased animals gave a negative result. Professor Paltauf of Vienna has written on agglutinins and precipitins and Professor Tavel of Berne on polyvalent anti-streptococcic serum. Dr. Friedmann of the Anatomical and Biological Institute of Berlin University reports that the tubercle bacillus of the tortoise is very

like the tubercle bacillus of the human species; by injections of the former bacillus he has succeeded in immunising guinea-pigs against tuberculosis. Other contributions to the Festival Number relate to the use of antidiphtheritic serum in general practice and to the cure of a case of puerperal septicæmia by injections of anti-streptococcic serum. Lord Lister, who was also asked to contribute, has written the following letter to the editor: "I greatly regret that in consequence of the state of my health at present it is impossible for me to comply with your request that I should contribute to your Festival Number an expression of my high appreciation of the important labours of Robert Koch. No one, perhaps, has a greater admiration of his work than myself." Professor Koch happens to be spending his birthday at a great distance from Berlin—namely, at Buluwayo, in South Africa, where for the second time he has been asked to advise the Colonial Government in its measures against rinderpest. He is not expected to arrive home before the month of March and the celebration of his birthday must thus be postponed till that date. His bust will be unveiled in the Institution for Infectious Diseases and a museum, showing the development of the study of bacteriology, will be opened after his return. As Professor Koch is firmly opposed to a public celebration, only his present and former assistants will take part in the proceedings.

Dec. 28th, 1903.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Character of Present Immigration.

THE total number of immigrants last year was 857,046, the largest number in one year in the history of the country. In a recent report the United States Commissioner of Immigration states that the great bulk of the present immigration proceeds from Italy, Austria, and Russia, and from some of the most undesirable sources of population of those countries. Immigration from such countries as Germany and the British Isles has fallen to a very low figure. The great bulk of the present immigration settles in four of the eastern States and most of it in the large cities of those States. Thousands of foreigners keep pouring into our cities, declining to go where they might be wanted because they are neither physically nor mentally fitted to go to these undeveloped parts of the country and to do as did early settlers from northern Europe. The number of immigrants from northern and western Europe last year was 203,008, or 28·8 per cent., and from southern and eastern Europe 610,813, or 71·3 per cent. These figures show that while there has been some increase in the immigration from northern and western Europe the greater proportion of immigrants has come from the less desirable races of southern and eastern Europe. The illiteracy of races as shown by the tests applied to immigrants over 14 years of age was as follows: western Europe 3·9 per cent., and for eastern Europe, including Spain and Portugal, 39·7 per cent. The Commissioner at New York states that there is a large body of immigrants who are not reached by our restrictive laws and who are undesirable because unintelligent, of low vitality, of poor physique, able to perform only the cheapest kind of manual labour, desirous of settling almost exclusively in the cities, and by their competition tending to reduce the standard of living of the American wage-worker and unfitted, mentally and morally, for good citizenship. He believes that at least 200,000, and probably more, aliens come here who will prove a detriment. It is misleading to assert that because immigration in the past has been a source of greatness to the country it should not be further restricted; past immigration was good, because most of it was of the right kind and went to the right place.

Pure Food Standard.

The Secretary of the Interior has approved and proclaimed the official food standards which have been formulated by the United States Food Standard Commission and the executive committee of the National Association of Pure Food Commissions. The object of the law is to establish standards corresponding to American food materials, whether raw or manufactured, and in accordance with the results of American processes of manufacture. The standards consist of definitions and chemical limits and embrace meat and its products, milk and its products, sugar and related substances, spices, and cocoa and cocoa products. No chemical limits are named for the meat products, the standard being fixed by definition only, which gives this description: sound, dressed, and properly prepared edible parts of animals in good health at the time of slaughter. The standard of milk is fixed at not less than 12 per cent. of total solids, not less than 8½ per cent. of solids not fat, and not less than 3½ per cent. of milk fat. The standard of condensed milk contains not less than 28 per cent. of milk solids, of which one-fourth must be milk fat. The standard of butter contains not less than 82½ per cent. of butter fat and may contain additional colouring matter. For cheese a minimum of 50 per cent. of butter fat in the water-free substance is prescribed. Ice-cream, to be standard, must have a minimum of 6 per cent. milk fat. Refinery syrups as ordinarily made are classified as molasses and syrups; the standard of the former requires not over 25 per cent. of water and of the latter not over 30 per cent. of water or 2½ per cent. of ash. These are examples of the work of the commission as far as it has fixed standards. The work is to be continued until the list of foods is completed. An exhibit of the work of the State Food Department is to be made at the World's Fair at St. Louis and an exposition of the methods of adulteration in foods and beverages is to be given in order to show the public how to protect itself in the purchase of food commodities.

A National Hygienic Laboratory.

The creation of this laboratory by an Act of Congress is a striking proof of the great advance of State medicine in the United States. The building, which is now nearly completed, is a model of its kind. It is located on grounds formerly belonging to the Naval Museum of Hygiene at Washington and will be under the direction of the Department of the United States Public Health and Marine Hospital Service. The building is constructed so as to give ample accommodation to the several branches of work, as chemistry, pharmacology, pathology, and bacteriology. The Act of Congress provided that there should be an advisory board for the hygienic laboratory, consisting of three competent experts detailed from the army, the navy, and the Bureau of Animal Industry, together with the director of the laboratory and five additional members appointed by the Surgeon-General of the Public Health and Marine Hospital Service, who shall be skilled in laboratory work in its relation to the public health. The chiefs of divisions are to be skilled in their respective lines of scientific research work, especially in its relation to the public health. The results of the researches of the laboratory are to be published in bulletins. The laboratory will be ready for occupation about the 1st of the new year and plans are now under way for the production of a standard diphtheritic antitoxin for distribution to manufacturers, those engaged in research work, and others. The Act of Congress referred to also placed the supervision of plants manufacturing these products under the Public Health and Marine Hospital Service. The examination of these products will be conducted in the hygienic laboratory. The result of this supervision will, it is believed, relieve the market of the spurious antitoxins.

Tuberculosis Congresses.

The number of congresses for the suppression of tuberculosis which have been, and are being, arranged to take place during the coming season is surprising. There is to be the Baltimore Tuberculosis Exhibition, to be held in January under the combined auspices of the Tuberculosis Commission, the Maryland Board of Health, and the Maryland Public Health Association. Another tuberculosis exhibition will be held in St. Louis in connexion with the exhibition of Social Economy and under the subsection of Hygiene. It is announced that a congress on tuberculosis, under the name of "International Congress on Tuberculosis," will be held in St. Louis in October. Again, there is the American Congress on Tuberculosis for the Prevention of Consumption, which proposes an international convention at Washington in April, 1905. These instances of proposed meetings for the consideration of the single subject of tuberculosis are but few of the occasions on which this all-absorbing theme is discussed. Unfortunately many of these congresses in this country are not of a character to command the sympathy and support of the leading men of the profession. While they do not specially do harm to the great movement now taking place all over

the world against the great "white plague" they do not result in any very material advance in the adoption of radical measures for the extermination of this disease.

State Regulation of Marriage.

The Iowa Society for the Suppression of Disease and Degeneracy has prepared a Bill to be submitted to the legislature of that State providing that before a marriage licence can be issued to any person in that State a physician's certificate of examination must be obtained showing that the said person is physically and mentally qualified to enter into the married state under the laws of that State. The State of Iowa has long been in the front rank as regards sanitary, social, and political reforms and this new departure will be watched with great interest.

The Administrative Control of Tuberculosis.

The health authorities of New York passed an ordinance in 1897 requiring the registration of every person suffering from pulmonary tuberculosis by the physicians, managers of institutions, hospitals, and dispensaries of the city. Stringent regulations were made in regard to the management of all reported cases and being printed on cards were furnished to patients, friends, and guardians. The report of the results has just been issued and forms an interesting chapter on the value of the administrative control of contagious and infectious diseases. The death-rate from pulmonary tuberculosis had steadily fallen during the period.

Dec. 20th, 1903.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the first professional examination for the diploma of Fellow at the half-yearly meeting of the examiners:—

Oswald Lacy Addison, M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., University College and King's College, London; James Alford Andrews, M.R.C.S. Eng., L.R.C.P. Lond., M.B., B.C. Camb., Cambridge University and Guy's Hospital; John Bramley Ball, George Norton Bartlett, Thomas Henry Barton, and George Cockcroft, Guy's Hospital; Robert Tullis Baillie, M.B., Ch.B. Edin., Edinburgh University; Arthur Sydney Blundell Bankart, B.A. Camb., Cambridge University, King's College, and Guy's Hospital; Robert Davies-Colley, B.A. Camb., Cambridge University and Guy's Hospital; Alfred Dinnis, Charing Cross Hospital; Bertram Thomas Johnson Glover, Liverpool University; Paul Leon Guiseppi, St. Bartholomew's Hospital; William Hackney, M.R.C.S. Eng., L.R.C.P. Lond., M.D. Toronto, Toronto University and King's College, London; Arthur Herbert Hart, M.R.C.S. Eng., L.R.C.P. Lond., M.S., M.D. Durh., Durham University and the London Hospital; James Willie Heslop, M.R.C.S. Eng., L.R.C.P. Lond., M.B., B.S. Durh., Durham University; Montague Leonard Rine, Middlesex Hospital; Arthur Cyril Hudson, M.A., M.B., B.C. Camb., Cambridge University and St. Thomas's Hospital; Thomas Bramley Layton, Guy's Hospital; James Edlington McDougall, M.R.C.S. Eng., M.B. Vict., D.P.H. Camb., Liverpool University; George Percival Mills, Birmingham University; James Eustace Ratcliffe McDonagh, Robert Foster Moore, B.A. Camb., Alan Hargrave Pinder, and Samuel Shuttleworth Rendall, St. Bartholomew's Hospital; Gerald Charles Frederick Robinson, Guy's Hospital; Henry Charles Samuel, King's College, London; Charles Harold Smith and Clare Oswald Stallybrass, Liverpool University; Claude Etward Tangye, B.A. Lond., Birmingham University; Walter Welchman, B.A., Cape of Good Hope, Guy's Hospital; Harold Beckwith Whitehouse, St. Thomas's Hospital; and Courtenay Yorke, Liverpool University.

96 gentlemen presented themselves for this examination of whom 32 passed and 64 were referred.

The following gentlemen having passed the final examination for the diploma of Fellow and having conformed to the by-laws and regulations have been admitted Fellows of the College:—

John George Ogilby Hugh Lane, M.B., B.S. Durh., L.R.C.P. Lond., Guy's and St. Thomas's Hospitals and Durham University, Member May 9th, 1895; John William Myler, M.D. Brux., L.R.C.P. Lond., Middlesex Hospital, Member July 29th, 1896; Theodore Henderson Molesworth, B.A., M.B., B.C. Camb., L.R.C.P. Lond., Cambridge University and St. Bartholomew's Hospital, Member Nov. 12th, 1896; Frank Edward Taylor, M.A., M.B., B.Ch., M.Sc. Vict., L.R.C.P. Lond., Yorkshire College and General Infirmary, Leeds, and King's College Hospital, Member Feb. 11th, 1897; Frank Atcherley Rose, M.A., M.B., B.C. Camb., L.R.C.P. Lond., Cambridge University and St. Bartholomew's Hospital, Member Feb. 9th, 1899; Benjamin Holroyd Slater, B.A., M.B. Camb., L.R.C.P. Lond., Cambridge University and Middlesex Hospital, Member May 11th, 1899; George Grey Turner, M.B., B.S. Durh., L.R.C.P. Lond., Durham University, Member Oct. 12th, 1899; Harry Ellis Brawn, L.R.C.P. Lond., Birmingham University, Member Nov. 2nd, 1899; William Henry Maxwell, M.A., M.B. Camb., L.R.C.P. Lond., Cambridge University and London Hospital, Member Nov. 2nd, 1899; John Frederick Jennings, M.B. Lond., L.R.C.P. Lond., St. Bartholomew's Hospital, Member July 25th, 1900; James Cole Marshall, M.B. Lond., L.R.C.P. Lond., St. Bartholomew's Hospital, Member Nov. 8th, 1900; Miles Harris Phillips, M.B. Lond., L.R.C.P. Lond., University College, Bristol, and London Hospital, Member Nov. 8th, 1900; Charles Seymour Parker, M.B. Lond., L.R.C.P. Lond. (L.M.S.), University College Hospital, Member August 1st, 1901; Henry Tugellas Dobbie, L.R.C.P. Lond., St. Mary's Hospital, Member Feb. 13th, 1902; Frederick William Forbes Ross, M.D., C.M. Edin., D.P.H. Eng., L.R.C.P. Lond., Edinburgh University and Middlesex Hospital, Member April 2nd, 1903; George Coats, M.D., Ch.B. Glasg., Glasgow University and St. Bartholomew's Hospital, not a Member; Cyril Arthur Bennett Horsford, M.D., Ch.B. Edin., Edinburgh University and St. Bartholomew's Hospital, not a Member; William Carlyle Wilson, M.B., Ch.B. Edin., Edinburgh University and St. Bartholomew's Hospital, not a Member; and David Storer Wylie, M.B., Ch.B Viet., Owens College, Victoria University, and King's College Hospital, not a Member.

64 gentlemen presented themselves for this examination, 22 of whom passed (including three gentlemen who have not yet attained the legal age of 25 years) and 42 were referred, nine for one year and 33 for six months.

UNIVERSITY OF CAMBRIDGE.—At the examinations for medical and surgical degrees held in Michaelmas term the following candidates were successful:—

SECOND EXAMINATION.

Human Anatomy and Physiology.—J. B. Banister, B.A., Jesus; F. A. Barker, B.A., Emmanuel; R. L. Barwick, B.A., Christ's; T. H. H. Blake, B.A., Pembroke; L. B. Cane, B.A., King's; S. P. Chan, Caius; S. Churchill, B.A., Trinity; H. N. Coleman, Christ's; R. B. Corry, B.A., Caius; R. Crawford, Jesus; W. F. Denning, B.A., Trinity; A. W. C. Drake, B.A., Pembroke; A. C. J. Elwin, Corpus Christi; E. G. Fearnsides, Trinity Hall; N. M. Fergusson, Magdalene; W. J. Fison, Sidney Sussex; R. L. Gamlen, B.A., Caius; B. C. Ghosh, M.A., St. John's; G. W. Goodhart, B.A., and G. Graham, Trinity; G. F. Greenwood, B.A., Sidney Sussex; F. W. W. Griffin, B.A., King's; H. S. Hall, B.A., Pembroke; R. A. Hill, Caius; E. B. Hinde, B.A., Emmanuel; W. H. Hodgson, B.A., Christ's; R. S. Jenkins, B.A., St. John's; A. R. Jordan, Clare; R. B. Lloyd, B.A., Emmanuel; R. G. Markham, Caius; J. H. B. Martin, B.A., Emmanuel; D. C. Master, B.A., Caius; J. B. Mennell, B.A., Pembroke; E. V. Oulton, B.A., Christ's; D. G. Pearson, B.A., Pembroke; R. C. Priest, Caius; R. L. Rawlinson, B.A., Trinity; E. F. Skinner, Corpus Christi; A. C. H. Suhr, B.A., Caius; W. H. R. Sutton, B.A., Downing; B. S. Taylor, M.A., Clare; C. B. Tickehurst, B.A., St. John's; C. Tylor, B.A., and K. M. Walker, Caius; S. L. Walker, B.A., Sidney Sussex; B. Wallis, B.A., H. P. Weaver, B.A., and H. B. Weir, B.A., Trinity; C. E. Whitehead, Caius; and F. P. Young, B.A., and R. F. Young, B.A., Christ's.

At the Congregation on Dec. 17th Dr. N. I. C. Tirard was appointed an examiner in pharmacology for the Third M.B. Examination Part I., in the place of Sir Thomas R. Fraser who is unable to examine.—At the same Congregation the following degrees were conferred:—

Master of Surgery.—C. E. Marriott, Clare.
Bachelor of Medicine.—G. B. Norman, St. John's; and G. E. Loveday, Gonville and Caius.

TRINITY COLLEGE, DUBLIN.—At examinations for the Diploma in Public Health, held in Michaelmas term, the following candidates were successful:—

Part I.—John H. Brunskill, John T. Bouchier-Hayes, and John W. H. Houghton.
Part II.—John H. Brunskill, John T. Bouchier-Hayes, William F. Erskine, John W. H. Houghton, and James H. Douglass.

FOREIGN UNIVERSITY INTELLIGENCE. — *Basle:* Dr. Friedrich Siebenmann, Extraordinary Professor, has been promoted to the position of Ordinary Professor of Diseases of the Throat, Nose, and Ear.—*Berne:* Dr. August Siegrist of Basle has been appointed to the chair of Ophthalmology.—*Breslau:* Dr. Georg Wetzel has been recognised as *privat docent* of Anatomy.—*Brussels:* Professor Depage has been appointed Director of the Surgical Clinic in the Hospital Saint Jean.—*Giessen:* Dr. K. H. Kisskalt has been recognised as *privat docent* of Hygiene.—*Göttingen:* Dr. Jacobsthal has been recognised as *privat-docent* of Surgery.—*Heidelberg:* Dr. Hugo Starck has been promoted to an Extraordinary Professorship of Internal Medicine. Dr. Karl Bonhoeffer of Breslau has been offered the chair of Mental Diseases as successor to Dr. Kraepelin who goes to Munich.—*Kharkoff:* Dr. Mikhin has been appointed Extraordinary Professor of Midwifery, Gynæcology, and Children's Diseases.—*Padua:* Dr. G. Velo of Naples has been recognised as *privat-docent* of Operative Medicine.—*Prague (Bohemian University):* Dr. Ludwig Rydygier of Lemberg has been appointed to the chair of Surgery in succession to the late Dr. Mayde.—*Rome:* Dr. R. Dalla Vedova has been recognised as *privat-docent* of External Pathology.—*Vienna:* Dr. Garré of Königsberg has been appointed to succeed Dr. Gussenbauer as Professor of Surgery. He is 47 years of age and of Swiss nationality.

LITERARY INTELLIGENCE.—Next week Messrs. J. and A. Churchill will publish a second edition of "A Manual of General or Experimental Pathology" by Dr. W. S. Lazarus-Barlow. The interval that has elapsed since the first edition was published has necessitated the alteration of much of the matter. As a new feature illustrations are now introduced. The same publishers are also about to issue the third edition of Vol. I. of "A Manual of Botany," by Professor J. Reynolds Green, F.R.S. The subjects treated are Morphology and Anatomy.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Augusto Ferreira dos Santos, professor of medical chemistry in Rio de Janeiro.—Dr. Angelo Mafucci, professor of pathological anatomy in Pisa.—Dr. Duflocq, medical officer of the Paris hospitals.—Dr. Aguilar, professor of clinical surgery in Buenos Ayres.—Dr. A. T. Almén, Principal of the Swedish Medical Department, at the age of 71 years. He was for many years professor of medical and physiological chemistry in the University of Upsala.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—The annual exhibition of this society was held at 11, Chandos-street, London, W., on Dec. 18th, 1903. The exhibition, which was very well attended, consisted of electro-medical apparatus by Mr. K. Schall, Mr. A. E. Dean, the Sanitas Electrical Co., Messrs. Isenthal and Co., Mr. H. W. Cox, and the Medical Supply Association. There was a fine display of radium by Mr. A. E. Cossor who also showed some therapeutic x-ray tubes. Mr. W. Martindale exhibited specimens of radium and pitch-blende, &c. During the evening an ordinary business meeting was held at which eight new members were elected. A conversazione followed when Sir Isambard Owen delivered an address to the society which we propose to publish at an early date.

THE PORT SANITARY AUTHORITY OF MANCHESTER.—At a recent meeting of the Manchester port sanitary authority Dr. A. M. N. Pringle reported that during the month of November 253 vessels were inspected in the Ship Canal, of which 220 were British. Defective or insanitary conditions were found in 110, of which 104 were British. In one vessel with a Lascar crew the starboard forecastle, certified for 14 men, was occupied by 22, and the port forecastle, certified for 14, was occupied by 19. Lascars, of course, require and are entitled to as much space as English seamen. He afterwards asked for permission to act if any vessel infected with plague-stricken rats came into port. At Liverpool it seems they have a machine by which vermin and rats can be killed and the ship disinfected. The matter is so important that one would have thought his request would be at once granted, but, strange to say, it was put off to a more convenient season and is to be considered at the next meeting of the authority. It is to be hoped that in the meantime the plague-stricken rats will postpone their visit till the authority is better prepared for their reception.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, Bartholomew Close, E.C.

Asthma in Relation to the Nose. With Notes of 402 Cases. By Alexander Francis, M.B., B.C. Cantab. Price 5s. net.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Squint Occurring in Children. An Essay. By Edgar A. Browne, F.R.C.S. Ed., Lecturer on Ophthalmology, University, Liverpool. Assisted by Edgar Stevenson, M.D., M.Ch. Aberd., Demonstrator of Ophthalmology, University, Liverpool. Price 2s. 6d. net.

CASSELL & CO., LIMITED, London, Paris, New York, and Melbourne.

A Manual of Operative Surgery. By Sir Frederick Treves, Bart., K.C.V.O., C.B., LL.D., F.R.C.S., Sergeant Surgeon-in-Ordinary to H.M. the King, Surgeon-in-Ordinary to H.R.H. the Prince of Wales, Consulting Surgeon to the London Hospital. New edition, revised by the author and Jonathan Hutchinson, Jun., F.R.C.S., Surgeon to the London Hospital, Examiner in Surgery, Royal Army Medical Department. In two volumes. Price £2 2s.

CHATTO AND WINDUS, 111, St. Martin's-lane, W.C.

Herbert Fry's Royal Guide to the London Charities. 1904. Edited by John Lane. New and revised edition—the fortieth. Price 1s. 6d.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Transactions of the Otological Society of the United Kingdom. Vol. IV. Fourth Session, 1902-1903. With List of Officers, Members, &c. Edited by Arthur H. Cheatle, F.R.C.S. Price 10s. net.

A Short Practice of Gynæcology. By Henry Jellett, B.A., M.D., B.Ch., B.A.O. Dublin University, F.R.C.P.I., L.M., Ex-Assistant Master, Rotunda Hospital; Extern Examiner in Midwifery and Gynæcology, Royal University of Ireland. Second edition, revised and enlarged. Price 10s. 6d. net.

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Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

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TURNER, H. N., M.B., B.S. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Castle Bytham District of the county of Lincoln.

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Births, Marriages, and Deaths.

BIRTHS

ANDERSON.—On Dec. 26th, 1903, at Newholme, Pitlochrie, Perthshire, the wife of John Anderson, M.B. and C.M. Edin., of a son.

FLETT.—On Dec. 21st, 1903, at Inchmahome, Sutton, Surrey, the wife of John S. Flett, M.B., D.Sc., of a daughter.

LYLE.—On Dec. 26th, 1903, at Cintra, Bromley, Kent, the wife of H. Willoughby Lyle, M.D., B.S. Lond., F.R.C.S. Eng., of a son.

MURRAY.—On Dec. 27th, 1903, at 2, Chevening-road, Kensal Rise, W., the wife of Richard Galway Murray, M.R.C.S., L.R.C.P., D.P.H., of a daughter.

DEATHS

BLAIR CUNYNGHAME.—On Dec. 23rd, 1903, at Rothesay-place, Edinburgh, Robert James Blair-Cunyngame, M.D., of Cromar.

CLAPTON.—On Dec. 27th, 1903, at 41, Eltham-road, Lee, S.E., Mary, wife of Edward Clapton, M.D., F.R.C.P., aged 69 years.

FOX.—On Dec. 25th, 1903, Lieutenant-Colonel William Smythe Fox, late I.M.S. (retired), in his 66th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE RESIGNATIONS OF MEDICAL MEN AT OLDBURY ALKALI WORKS.

ONE of the medical men concerned sends us the following account of an extraordinary situation at Oldbury:—

Seven medical men residing at Oldbury, Langley, &c., about five miles from Birmingham, have ceased their connexion with the Oldbury alkali works in the following circumstances. The works employ about 700 hands and for many years past it has been the custom to deduct from each employé the sum of 3*d.* a week for the medical man. The employé could select which medical man he liked from among the seven medical officers for a year, the medical man being paid according to the number of hands on his list. For this 3*d.* a week, or 13*s.* a year, he had to attend anyone at the works, from the highest salaried officials down to the navvy and their families, infants and adults, to conduct confinements, perform vaccinations, and make visits at their homes, whether he resided six yards away or six miles, whenever required, day or night. The medical man had also to find drugs and surgical appliances and, it is alleged, as will be seen, to provide the money for donations to benevolent institutions in addition. The medical men met together and asked that the whole of the money paid for their services by the men should be handed to them in its entirety, the reason for this being that from the 13*s.* per man the authorities have been in the habit of deducting 1*s.* 6*d.* to form a "Dispensary Fund," from which the cost of trusses, eye-shades, crutches, &c., could be defrayed for the benefit of the men. 700 times 1*s.* 6*d.* make £52 10*s.*, and this substantial sum was deducted every year. It is, the medical men contend, absurd to suppose that anything like £52 10*s.* could be required for such purposes. It is alleged that from the surplus all donations to charitable institutions were made on behalf of the men. The request of the medical men was refused. A meeting was held consisting of Mr. A. M. Chance, a gentleman noted for his public benefactions, and his committee. The petitioners were informed that the medical men were sufficiently well paid and that no alteration in their present rate of payment would be considered. They were further informed (presumably as a punishment for daring to ask that they should not be robbed of one-eighth of their just dues) that three of them would be dismissed and that only the four who were at the top of the poll at the annual election by the men would be allowed to act and that if they were not satisfied all of them would be dismissed and that surgeons would be imported from elsewhere to do the work. The medical men refused to allow any of their number to be dismissed for the benefit of the rest, so the following notice was posted up in the works on Dec. 24th:—

Dec. 24th, 1903.

OLDBURY ALKALI WORKS PROVIDENT SOCIETY.
DISPENSARY BRANCH.

In consequence of the doctors having declined the offer and terms of the committee for their services next year this branch of the society will cease on Thursday next and after that date the deduction from the wages will cease.

(Signed) A. M. CHANCE, *Chairman.*
G. A. COTTERILL, *Secretary.*

Then follow the names of the committee.

Our correspondent concludes by expressing a hope that the attempt to fill the vacant posts by importation from outside of any medical man will fail, and we endorse this view on the strength of his statement. We do not pretend to have tested it in detail, but he tells his story categorically, and no medical man should accept work under the Oldbury Alkali Works Provident Society until he has communicated with the General Practitioners' Union, 610, Coventry-road, Small Heath, Birmingham. The name of Chance is an honoured one in Birmingham and we cannot think the firm intend to treat professional gentlemen either with meanness or with discourtesy. Possibly neither side understands the arguments of the other.

FAILING TO NOTIFY CASES OF SMALL-POX.

AN unfortunate case in which a medical man was summoned for failing to notify cases of small-pox was dealt with recently at the Manchester police-court. On Sept. 30th the defendant notified that his servant had small-pox and she was taken to the hospital. He could not explain its origin and said that he had no suspicious cases passing through his hands at the time. In the course of a fortnight several cases occurred in the neighbourhood "and it appeared that the persons in question had been treated for more than a month" by the defendant "for chicken-pox." Dr. J. Niven, Dr. J. McR. Cowie, and Dr. Martin in their evidence said that though some cases of small-pox and chicken-pox had points of resemblance no experienced medical man should have any difficulty in diagnosing them. Mr. Brierley, in

stipendiary, said that a person was only liable if he was aware that the cases were small-pox. The defendant said he had only been in practice 12 months and had not attended a case of small-pox, and in the case in question "he never dreamt of small-pox." He was summoned for four cases but only fined for one, the others being dismissed. A fine of £5 and costs was inflicted, the stipendiary remarking "that he could not believe that the doctor was unaware that his patients were suffering from small-pox." This case does not reflect much credit on the teaching which can allow so important a point as the diagnosis of small-pox and chicken-pox to be passed over without special attention. For some time before the recent recrudescence of small-pox set in the supply of cases for clinical teaching was scanty and it might well happen that a young practitioner had never seen a case. In the future, thanks to the conscientious objectors or passive resisters and the *laissez-faire* policy of our rulers, it is probable that the supply of small-pox cases will be quite sufficient for clinical purposes and no practitioner of 12 months' standing will be able to say that he has never seen a case.

A DUELLIST'S PRECAUTION.

A QUAINT recognition of one of the common causes of septic conditions in gunshot wounds occurs in the entertaining "breezy papers" recently edited by Sir Herbert Maxwell and published by Mr. John Murray. Nearly a century ago, in July, 1806, Mr. Creevy wrote to his friend, Dr. Currie: "You see, my friend, Mr. Howorth, has been adding to the amusements of Brighton races by fighting a duel with Lord Barrymore. His lordship was his adversary at whist and chose to tell him that something he said about the cards was 'false,' upon which Howorth gave him such a blow as makes the lord walk about at this moment with a black eye. Of course, a duel could not be prevented. When they got to the ground Howorth very coolly pulled off his coat and said, 'My lord, having been a surgeon I know that the most dangerous thing in a wound is having a piece of cloth shot into it, so I advise you to follow my example.' The peer, I believe, despised such low professional care and no harm happened to either of them." It might be suggested that "low professional care" carried to its logical conclusion would have recommended the angry card-players to fight naked; they adopted, however, a more effective precaution in not getting hit.

CIVIL WAR.

WE received last week, just as we were going to press, a long letter from a gentleman who signed himself, "Chairman of the National Canine Defence League." Somebody seems to have accused him of being inaccurate. As, however, we have made no allusion to him or to his work or his society's work we do not think his defence of his previous statements, which was not made in our columns, need appear in THE LANCET. Somebody else has sent us a notice of a statue that is being raised to a brown dog. This seems to us a very reasonable movement in spite of the inconceivable silliness of its promoters. It may do good that the public should be reminded of the amusing failure of the National Antivivisection Society in its efforts to blacken the character of physiologists. We cannot, however, arbitrate in the quarrels of rival antivivisection societies.

THE TREATMENT OF PEDICULI CAPITIS.

To the Editors of THE LANCET.

SIRS,—If your correspondent "E" will sponge the hair with dilute acetic acid, or even simple vinegar, I think he will attain his object. It will be wiser, however, to combine some parasiticide with it to ensure the destruction of any young brood and thus prevent the renewing of the nits. I am, Sirs, yours faithfully,

Ryde, Dec. 30th, 1903. J. MILLER.

*** We have received several other replies advocating different preparations of turpentine or paraffin; notably one from from Messrs. Arthur and Co. recommending the steady use of paraffin, the head to be combed regularly, shampooed, and dried in the air.—ED. L.

THE KEARTON PHOTOGRAPHIC EXHIBITION.

Messrs. Richard and Cherry Kearton will show their collection of enlarged photographs, taken direct from nature, of birds, beasts, reptiles, insects, &c., at the Modern Gallery, 175, Bond-street, W. A private view will be held on Jan. 1st, 3 P.M. to 6 P.M., at the close of which Mr. Richard Kearton will deliver a lecture. The exhibition will be open from 10 A.M. to 9.30 P.M. from Jan. 2nd to Jan. 12th inclusive, except on the evenings of the 6th and 8th, when the exhibition will be closed at 6 P.M. We recommend every student of natural history to make an opportunity of seeing these photographs.

"THE DOCTOR."

WE have been asked to warn medical men, chemists, and others against buying, or in any way dealing with, pirated copies of the well-known picture called "The Doctor" by Mr. Luke Fildes, R.A., of which Messrs. Thomas Agnew and Sons, of 39B, Old Bond-street, publish an engraving. The picture has been extensively reproduced in America and from time to time pirated copies have been imported into the United Kingdom either as engravings or for use as advertisements, mainly in connexion with American chemical preparations. Large numbers of these copies have been seized and injunctions obtained against the importers. Electrotypes of the picture have also been offered to printers and chemists in the United Kingdom by several American electrotype manufacturing firms. It is desirable in the public interest that it should be as widely known as possible that the importation, exhibition, or use of any of these unlawful copies or electrotypes constitutes a breach of the Copyright Acts and that the owners of the copyright are compelled for their own protection to take proceedings against all persons whom they may find committing such breaches.

DIABETES.

To the Editors of THE LANCET.

SIRS,—Is it permissible to give maltine and its preparations to a patient suffering from diabetes mellitus, also glycerine? I have a patient attacked by this disease; since it came on he has lost his vision for near objects and cannot read or recognise faces a yard or two from him. Is there any special treatment for this loss of vision which I see mentioned in some works on diabetes? I shall be glad if any brother practitioner can advise me on the matter.

I am, Sirs, yours faithfully,

Dec. 22nd, 1903. TROUT.

IODIDE OF POTASSIUM AND SNEEZING.

To the Editors of THE LANCET.

SIRS,—The "excessive sneezing attended by severe nasal and conjunctival irritation" caused by small doses of iodide of potassium as described by "Cyclops" would probably disappear if larger doses of the iodide were given, say 10 or 15 grains. The action of the drug is also greatly improved by making the patient sip a tumblerful of hot water about an hour before meals. I am, Sirs, yours faithfully,

London Lock Hospital, Dec. 24th, 1903. J. S. PURDY, M.B. Aberd.

THE VAGINAL DOUCHE.

To the Editors of THE LANCET.

SIRS,—We must apologise to Dr. G. Crichton and acknowledge that he has much justification for his conclusions. Our catalogue shows 24 illustrations of vaginal pipes; of these, 18 are intended to show no hole at the apex; the remaining six are old illustrations, and we must admit misleading, but the pipes themselves are supplied without holes at the ends. We are, Sirs, yours faithfully,

Dec. 29th, 1903. DOWN BROS., LTD.

Dr. A. C. Ingle (Downing Grove, Cambridge) will be obliged if any of our readers can refer him to a firm who will prepare diagrams for lectures.

M. O. H. has omitted to furnish us with his name and address.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat, (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt.

Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (9th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (5th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Dr. F. J. Poynton and Dr. W. V. Shaw: The Staphylococcus Aureus and Rheumatic Fever. Dr. H. M. Stewart: Dermoid Tumour of Brain.—Dr. F. Buzzard: Dermoid Tumour of Brain.—Dr. J. H. Drysdale: Racemose Aneurysm of Brain.—Mr. H. L. Barnard and Mr. H. M. Rigby: Pulsating Exophthalmos with Aneurysms of the Internal Carotid.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Dr. R. H. Bell and Mr. J. D. Malcolm. Short Communications:—Dr. V. Bonney: Pyometra in One Half of a Septate Uterus.—Dr. A. W. W. Lea: Abscess of the Uterus. Paper:—Dr. H. R. Spencer: Fibro-myoma of the Intra-abdominal Portion of the Round Ligament of the Uterus.

FRIDAY (8th).—THE INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH (9, Adelphi-terrace, Strand, W.C.).—7.30 P.M. Council Meeting. Paper:—Dr. J. Spottiswoode-Cameron: The Sophistication of Foods.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Sir Dyce Duckworth and Prof. R. Marsh: A Case of Pneumococcal Peritonitis.—Dr. F. Taylor: A Case of Pneumococcal Peritonitis.—Dr. S. Phillips: A Case of Fibroid Disease of the Pancreas with Calculi, accompanied by Jaundice and subsequently by Diabetes, Laparotomy, Relief of Symptoms, Death.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (4th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—College opens.

TUESDAY (5th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Clinique. (Medical.)

WEDNESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. J. Freyer: Clinique. (Surgical.)

LONDON TEMPERANCE HOSPITAL (Hampstead-road, N.W.).—4 P.M. Lecture:—Diseases of the Stomach, Gastric Ulcer. (Post-Graduate Course.)

THURSDAY (7th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Mr. A. Doran: Abdominal Tumours and Swellings in Women.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Bruce: Demonstration of Medical Cases. (Post-Graduate Course.)

FRIDAY (8th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. Lawson: Clinique. (Eye.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1903, which was completed with the issue of Dec. 26th, are given in this number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1903 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s* 3*d*.

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 31st, 1903.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Dec. 25	29·99	W.	...	45	42	40	40	41	Overcast
,, 26	29·94	N.E.	...	49	41	37	37	38	Cloudy
,, 27	30·09	E.	...	51	40	38	39	40	Raining
,, 28	30·15	N.E.	0·04	39	39	36	37	38	Cloudy
,, 29	30·05	E.	0·02	48	35	33	31	33	Cloudy
,, 30	30·07	E.	...	48	36	31	Fzn.	32	Fine
,, 31	29·83	S.E.	...	35	33	30	Fzn.	31	Overcast

During the week marked copies of the following newspapers have been received: *Highland News, Glasgow Evening Times, Newcastle Evening Mail, Bristol Evening News, Isle of Man Examiner, Christian World, Ardrossan and Saltcoats Herald, Lincoln Citizen, Surrey Advertiser, Stratford-upon-Avon Herald Daily Chronicle, Hertfordshire Mercury, Pontypool Free Press, Sussex Coast Mercury, Sheffield Gazette, Leeds Post, Colliery Guardian, Surrey Times, &c.*

Communications, Letters, &c., have been received from—

A.—M. J. Astier, Asnières, France; Mr. M. Aikman, Lond.; A. B.

B.—Dr. J. S. Bolton, Nottingham; Major G. Bent, R.A.M.C., Fleet; Birmingham Children's Hospital, Secretary of; Dr. J. M. Bennion, Petersfield; Mr. W. A. Brend, Lond.; British Electro-Therapeutic Society, Lond., Hon. Secretary of; Mrs. Stanley Boyd, Lond.; Mr. J. W. Benson, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Dr. Edward Blake, Lond.; Dr. R. L. Bowles, Folkestone; Mr. J. Bros, Lond; Mr. W. G. Burcombe, Lincoln; Messrs. C. Barker and Sons, Lond.

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Letters, each with enclosure, are also acknowledged from—

A.—Dr. C. K. Austin, Paris; Mr. J. J. Anning, Leeds; A. L.; Dr. E. Antrobus, Great Malvern; Messrs. Armour and Co., Lond. A. G. S.; Apollinaris Co., Lond.; A. G., Lond.

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